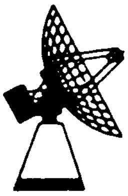
NEC **VHS** PAL

MODEL N9053G/N9055G

COLOR VIDEO CASSETTE RECORDER

SERVICE MANUAL

PART NO. 549-91-0387



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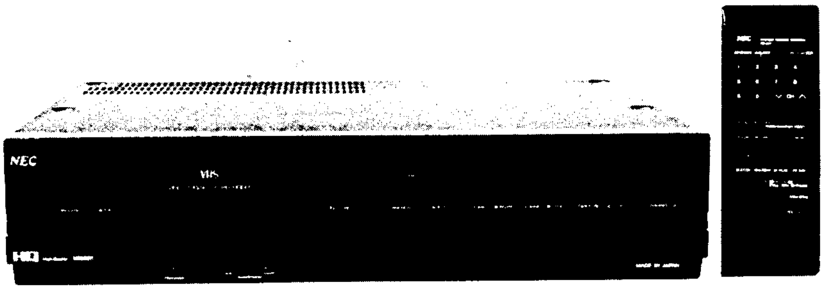

SPECIFICATIONS

Format : VHS PAL standard
Recording system : Rotary slant azimuth two-head scan system
Video signal system : PAL color and CCIR monochrome signal, 625 lines
Tape width : 12.65 mm (1/2 inch)
Tape speed : 23.39 mm/s
Maximum recording time : 240 min. with E-240 video cassette
Temperature (operating) : 5°C to 40°C
(storage) : – 20°C to 60°C
Channel coverage : UHF BAND IV/V, channels 21 - 69
Antenna output : UHF channels 30 - 39 (adjustable) 75 ohms, unbalanced
Power consumption : 21 Watts
Power requirement : 240 V ~, 50 Hz

VIDEO
Input : 0.5 to 2.0 Vp-p, 75 ohms unbalanced
Output : 1.0 ± 0.1 Vp-p, 75 ohms unbalanced
S/N ratio: : More than 43 dB
Horizontal resolution : 250 lines with the SHARPNESS control at center position

AUDIO
Input : – 8 dB, 47k ohms unbalanced
Output : – 6 dB, high impedance load
S/N ratio : More than 40 dB
Frequency range : 70 Hz - 10,000 Hz
Timer : Maximum 14-day/3-event
Dimensions : 430 mm (W) x 99 mm (H) x 375 mm (D)
Weight : 7.0 kg
Provided accessories : Remote control unit
Antenna cable
Size R6 batteries (2 pieces)

Design and specifications subject to change without notice.

NEC Corporation
TOKYO JAPAN

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SECTION 2
DISASSEMBLY (N9053G)

1. REMOVING THE CASE

1-1. TOP COVER (Figure 1-1)

(1) Remove four screws (1) on the top cover.

(2) Lift the rear of the top cover to release it in the direction of the arrow from the front panel.

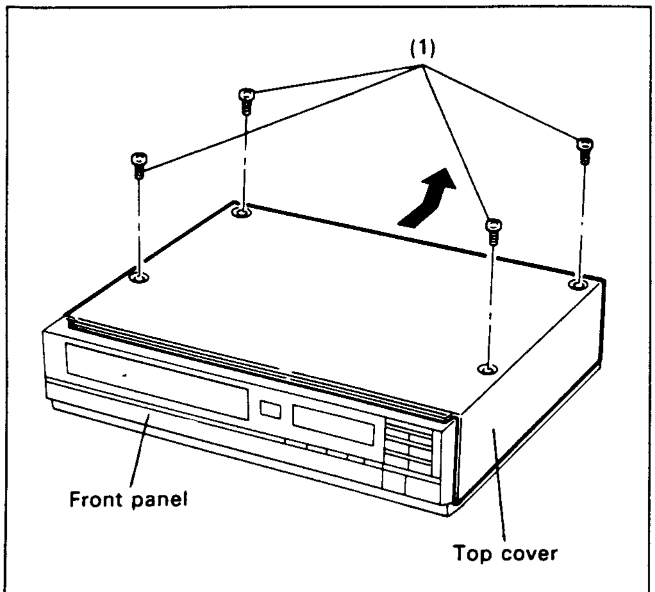


Fig. 1-1

1-2. BOTTOM COVER (Figure 1-2)

(1) Remove nine screws (2) on the bottom cover.

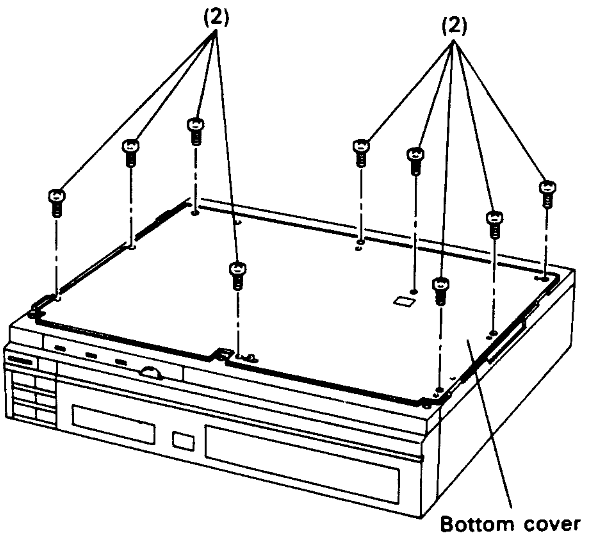


Fig. 1-2

1-3. FRONT PANEL (Figure 1-3)

(1) Remove the top cover. (Refer to Item 1-1.)

(2) Remove three screws (3) on the bottom of the front panel.

(3) Remove two screws (4) on the top of the front panel.

(4) Release tabs (5).

(5) Release tabs (6), and tilt the front panel forward to remove.

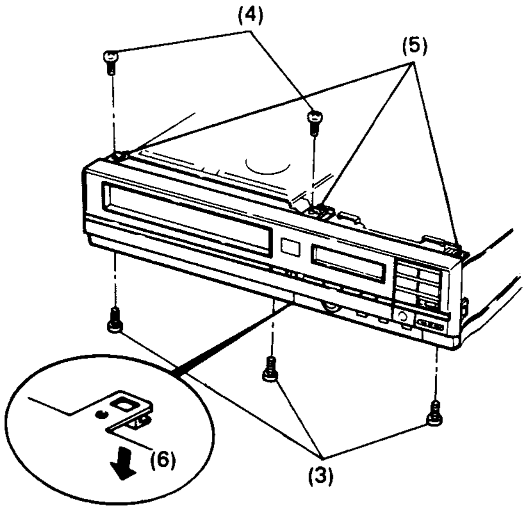


Fig. 1-3

Note: After releasing tabs (6), be sure to handle the tab set very carefully; Otherwise, the released tabs may return to their original locked positions.

SECTION 2-1
DISASSEMBLY (N9055G)

1. REMOVING THE CASE

1-1. TOP COVER (Figure 1-1)

(1) Remove four screws (1) on the top cover.

(2) Lift the rear of the top cover to release it in the direction of the arrow from the front panel.

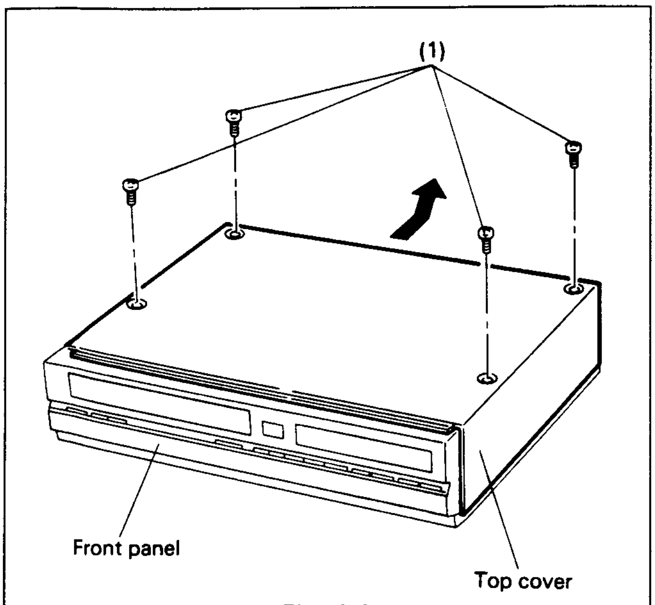


Fig. 1-1

1-2. BOTTOM COVER (Figure 1-2)

(1) Remove nine screws (2) on the bottom cover.

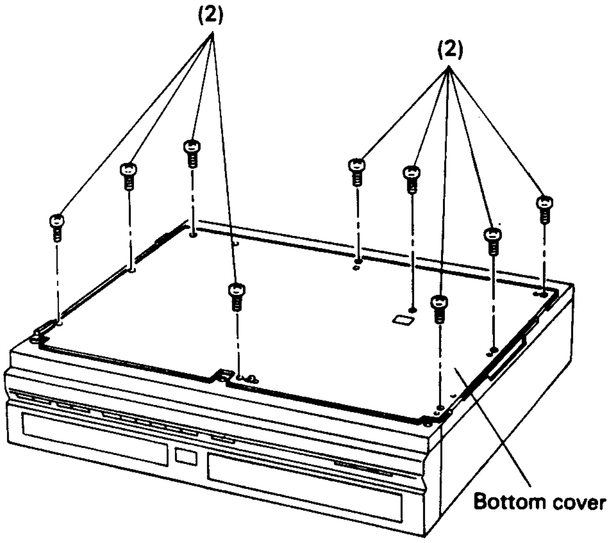


Fig. 1-2

1-3. FRONT PANEL (Figure 1-3)

(1) Remove the top cover. (Refer to Item 1-1.)

(2) Remove three screws (3) on the bottom of the front panel.

(3) Remove two screws (4) on the top of the front panel.

(4) Release tabs (5).

(5) Release tabs (6), and tilt the front panel forward to remove.

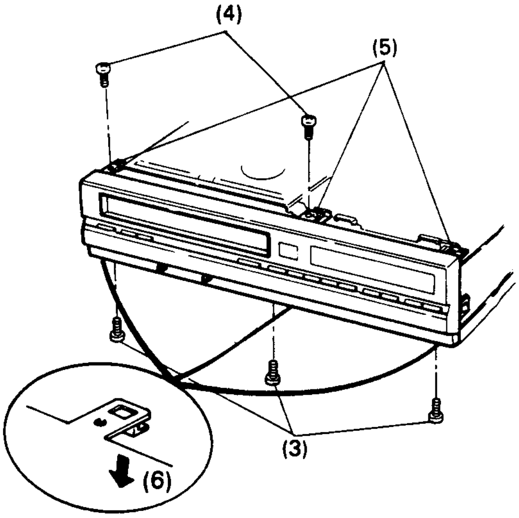
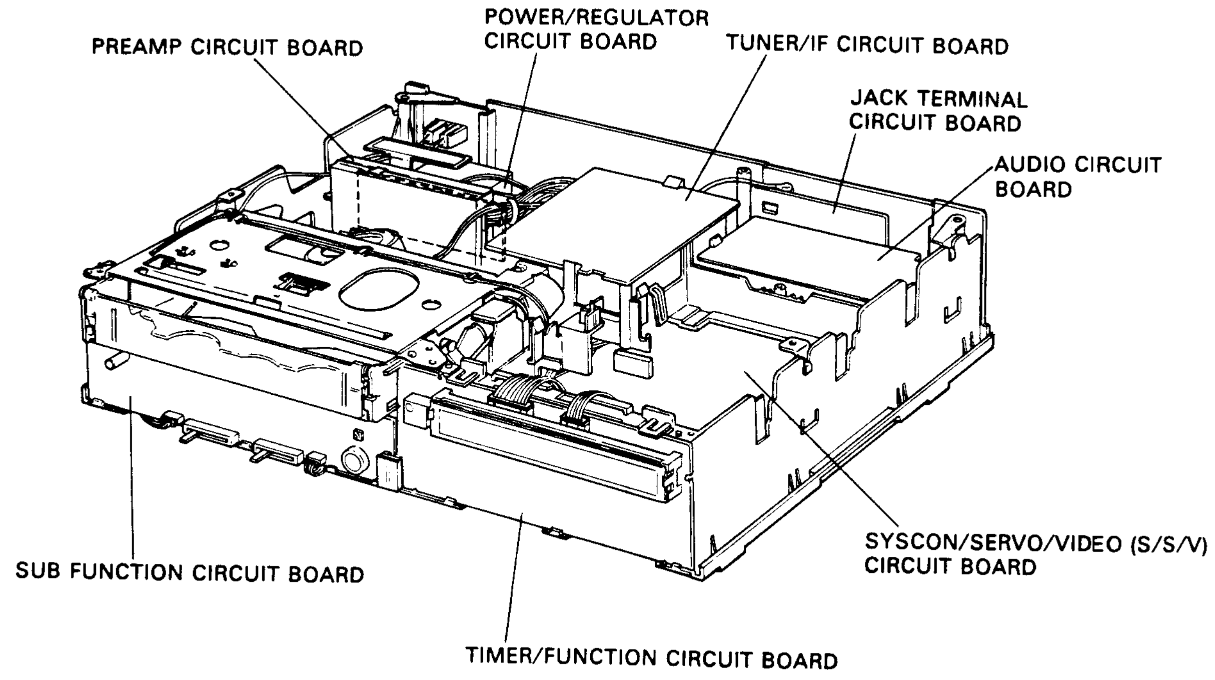


Fig. 1-3

Note: After releasing tabs (6), be sure to handle the tab set very carefully; Otherwise, the released tabs may return to their original locked positions.

2. CIRCUIT BOARD LOCATIONS

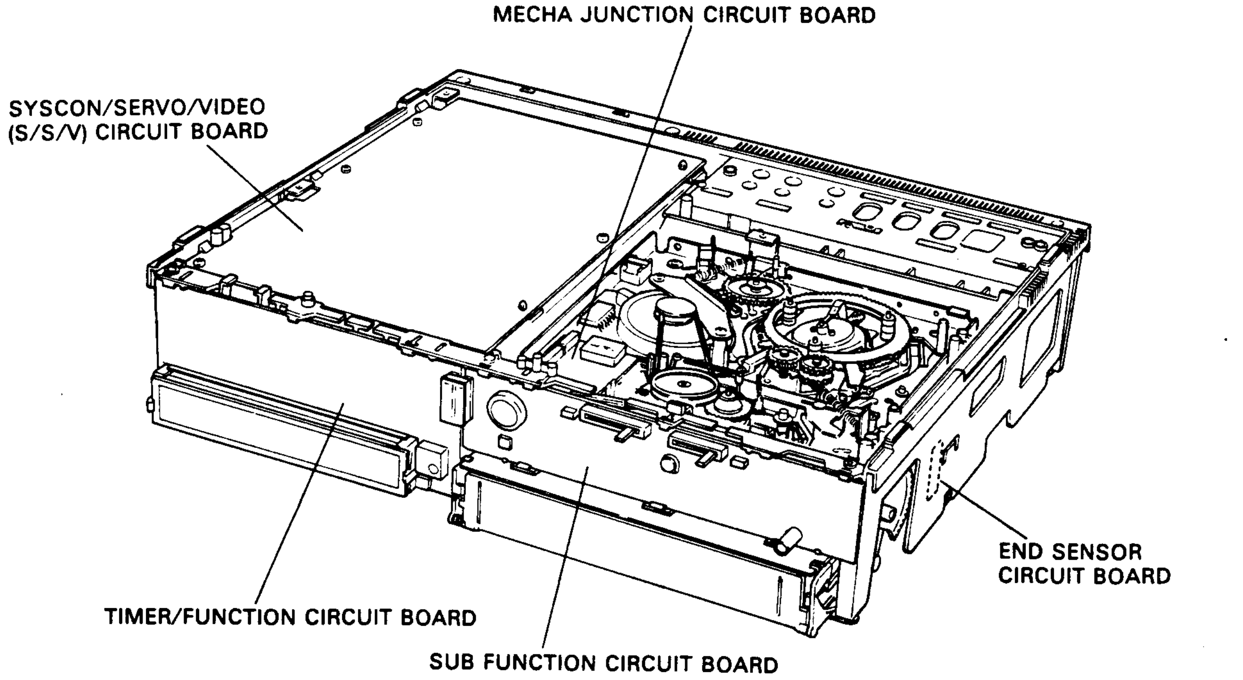
2-1. TOP VIEW


POWER/REGULATOR CIRCUIT BOARD
PREAMP CIRCUIT BOARD
TUNER/IF CIRCUIT BOARD
JACK TERMINAL CIRCUIT BOARD
AUDIO CIRCUIT BOARD
SYSCON/SERVO/VIDEO (S/S/V) CIRCUIT BOARD
SUB FUNCTION CIRCUIT BOARD
TIMER/FUNCTION CIRCUIT BOARD

Front side

Fig. 2-1

2-2. BOTTOM VIEW


MECHA JUNCTION CIRCUIT BOARD
SYSCON/SERVO/VIDEO (S/S/V) CIRCUIT BOARD
END SENSOR CIRCUIT BOARD
TIMER/FUNCTION CIRCUIT BOARD
SUB FUNCTION CIRCUIT BOARD

Front side

Fig.2-2

3. REMOVING THE CIRCUIT BOARDS

3-1. SUB FUNCTION CIRCUIT BOARD (Figure 3-1)

(1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
(2) Disconnect two wire connectors (1) from the circuit board.
(3) Remove the junction (2) connecting the sub function circuit board and timer/function circuit board.
(4) Release three tabs (3) on the top of the circuit board in the direction of the arrow, and lift the circuit board to remove.

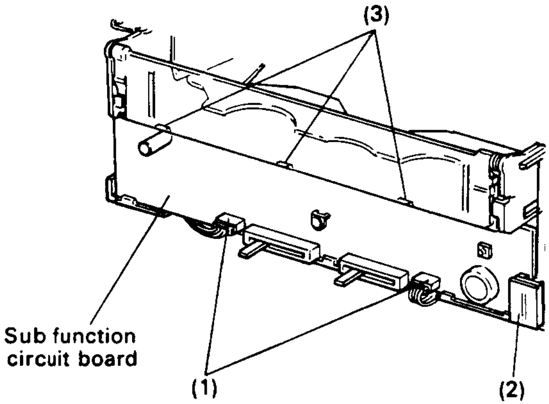


Fig. 3-1

3-2. TIMER/FUNCTION CIRCUIT BOARD (Figure 3-2)

(1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
(2) Disconnect two wire connectors (1) from the circuit board.
(3) Remove the junction (2) connecting the sub function circuit board and timer/function circuit board.
(4) Release two tabs (3), and lift the circuit board to remove.

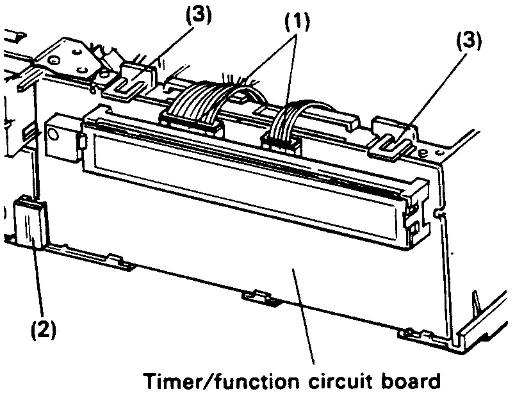


Fig. 3-2

3-3. PREAMP CIRCUIT BOARD (Figure 3-3)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Remove two screws (1).
(3) Disconnect three wire connectors (2) from the preamp circuit board.

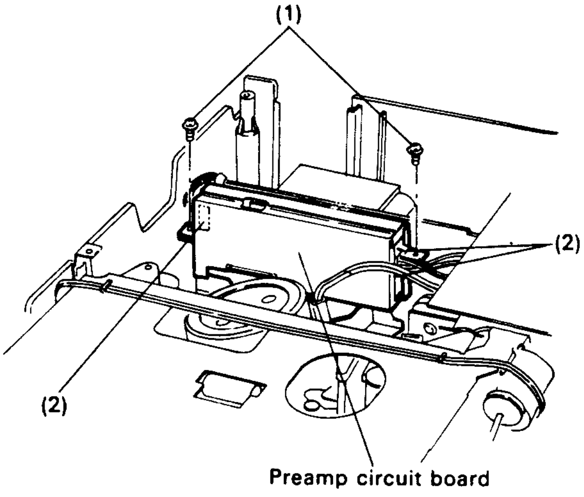


Fig. 3-3

Note: Be very careful not to damage the drum head circuit board when removing the preamp circuit board.

3-4. TUNER/IF CIRCUIT BOARD (Figure 3-4)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Remove three screws (1) from the tuner/IF circuit board.
(3) Release two tabs (2).
(4) Lift and tilt the tuner/IF circuit board toward the rear panel.
(5) Disconnect the 75-ohm VHF cable (3).
(6) Disconnect three wire connectors (4).

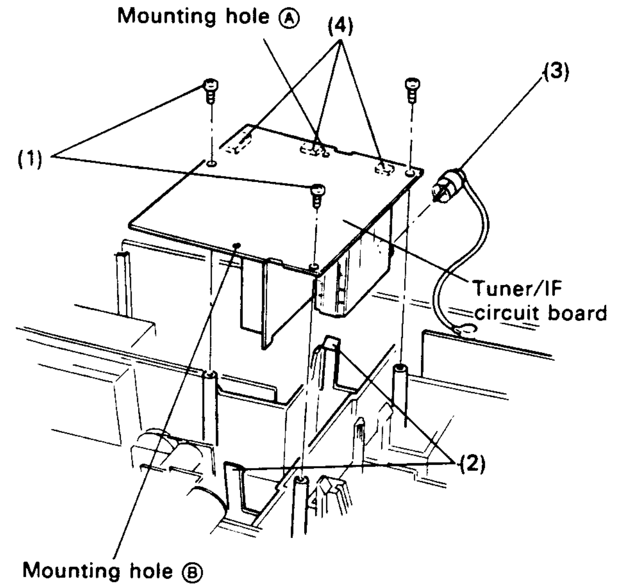

Mounting hole Ⓐ
(4)
(3)
(1)
Tuner/IF circuit board
(2)
Mounting hole Ⓑ

Fig. 3-4

Note: To install the circuit board, align the circuit board-mounting pins with mounting holes Ⓐ and Ⓑ.

3-5. POWER/REGULATOR CIRCUIT BOARD (Figure 3-5)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Remove the bottom cover. (Refer to Item 1-2.)
(3) Remove the tuner/IF circuit board. (Refer to Item 3-4.)
(4) Disconnect four wire connectors (1) from the power/regulator circuit board.
(5) Remove five screws (2).
(6) Lift the power/regulator unit together with the AC outlet plate to remove.
(7) Remove four screws (3) to release the power/regulator circuit board from the base.

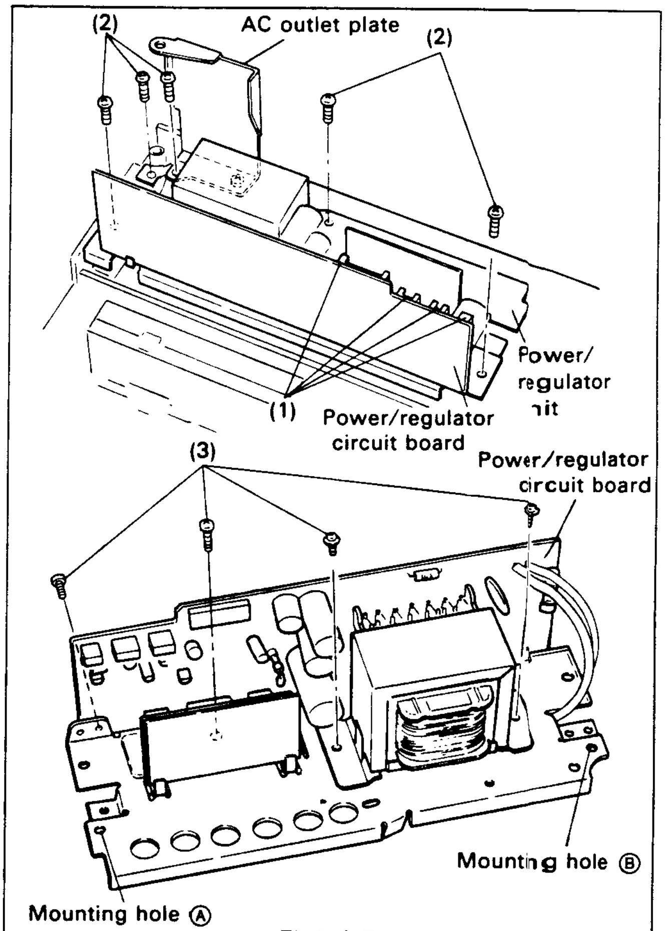

(2)
AC outlet plate
(2)
Power/regulator unit
(1)
Power/regulator circuit board
(3)
Power/regulator circuit board
Mounting hole Ⓑ
Mounting hole Ⓐ

Fig. 3-5

Note: To install the power/regulator unit, align the mounting pins with mounting holes Ⓐ and Ⓑ.

3-6. JACK TERMINAL CIRCUIT BOARD (Figure 3-6)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Disconnect the 75-ohm cable (1).
(3) Disconnect wire connector (2).
(4) Pull the terminal plate up and remove the jack terminal circuit board.
(5) Disconnect wire connector (3).

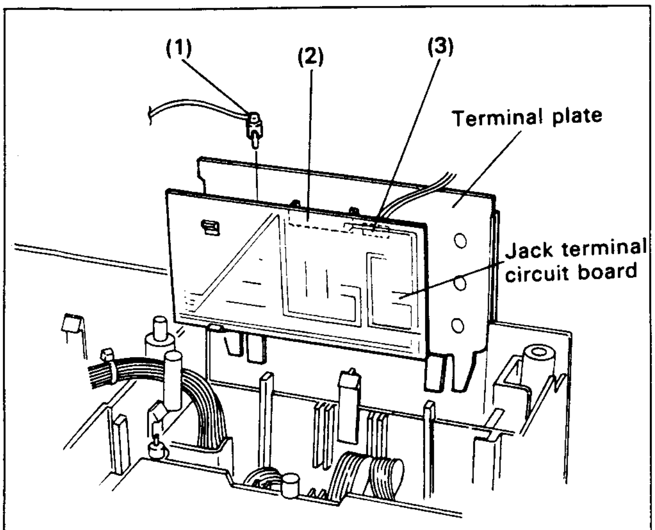

(1)
(2)
(3)
Terminal plate
Jack terminal circuit board

Fig. 3-6

Notes:

1. The jack terminal circuit board is united with the terminal plate.
2. To install the jack terminal unit, fit the terminal plate into the mounting position until it clicks in the locked position.

3-7. AUDIO CIRCUIT BOARD (Figure 3-7-1)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Disconnect four wire connectors (1) from the audio circuit board.
(3) Release two tabs (2).
(4) Release the circuit board from two slide hinges (3).

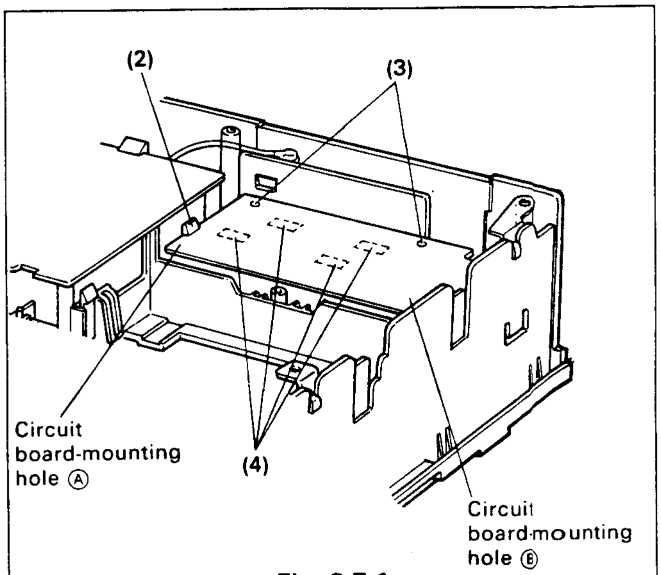

(2)
(3)
Circuit board-mounting hole Ⓐ
(4)
Circuit board-mounting hole Ⓑ

Fig. 3-7-1

To install the circuit board, align the circuit board-mounting pins with mounting holes Ⓐ and Ⓑ.

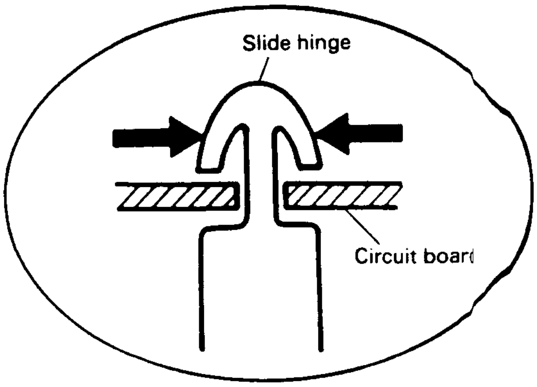

Slide hinge
Circuit boar

Fig. 3-7-2

Note: When removing the circuit board from each slide hinge, use pliers to squeeze these hinges in the directions of the arrows shown in the figure to release.

3-8. S/S/V CIRCUIT BOARD (Figure 3-8-1)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Remove the bottom cover. (Refer to Item 1-2.)
(3) Perform steps (2) and (3) in the Item 3-7, and raise the audio circuit board toward the rear panel.
(4) Disconnect eighteen wire connectors (1) from the S/S/V circuit board from inside the VCR.
(5) Remove four screws (2) from the S/S/V circuit board.
(6) Release three tabs (3).
(7) Release the circuit board from the two slide hinges (4).

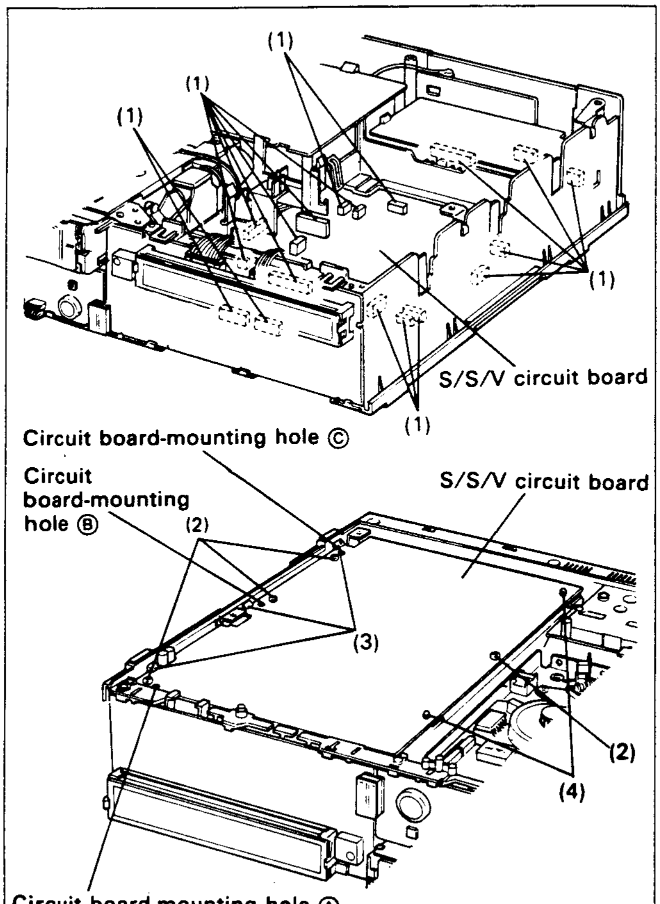

(1)
(1)
(1)
(1)
S/S/V circuit board
(1)
Circuit board-mounting hole Ⓒ
Circuit board-mounting hole Ⓑ
(2)
S/S/V circuit board
(3)
(2)
(4)
Circuit board-mounting hole Ⓐ

Fig. 3-8-1

To install the circuit board, align the circuit board-mounting pins with mounting holes Ⓐ, Ⓑ and Ⓒ.

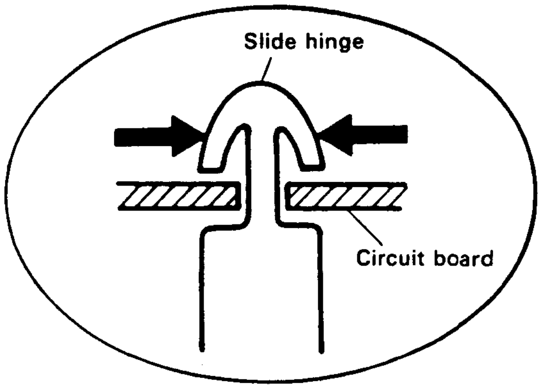

Slide hinge
Circuit board

Fig. 3-8-2

Note: When removing the circuit board from each slide hinge, use pliers to squeeze these hinges in the directions of the arrows shown in the figure to release.

4. REMOVING THE CASSETTE MECHANISM

4-1. REMOVING THE CASSETTE HOUSING ASSEMBLY (Figures 4-1-1, 4-1-2)

(1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)

(2) Remove two screws (1). Pull up the rear part of the cassette housing assembly and pull backwards 4-5 mm carefully to release the claw of the front side of the cassette housing assembly from the chassis. Then carefully pull it out upwards.

(3) Disconnect connector (2).

(4) To remove the cassette loading circuit board, release four tabs (3).

Note: The removed screws should be used again to reinstall the cassette housing assembly. Never use screws other than the ones originally removed.

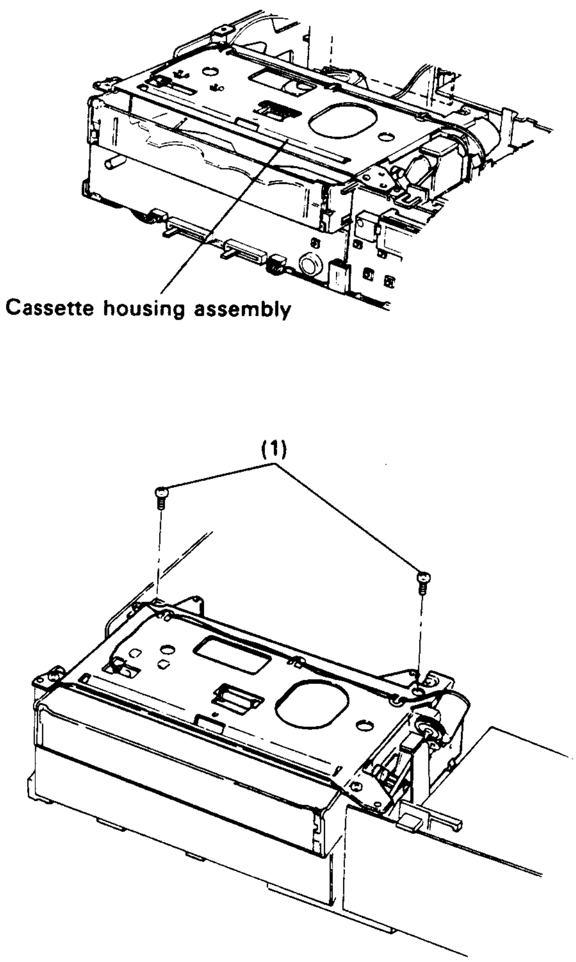

Cassette housing assembly
(1)

Fig. 4-1-1

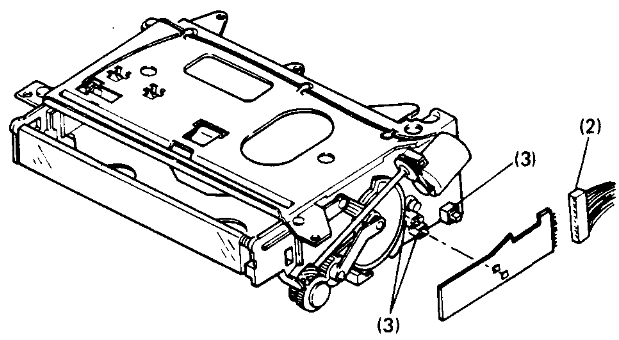


Fig. 4-1-2

4-2. FRONT COVER (Figure 4-2)

(1) Push the front cover into the cassette housing.

(2) Push the side panel (L) outward, and remove the front cover, together with the front cover spring.

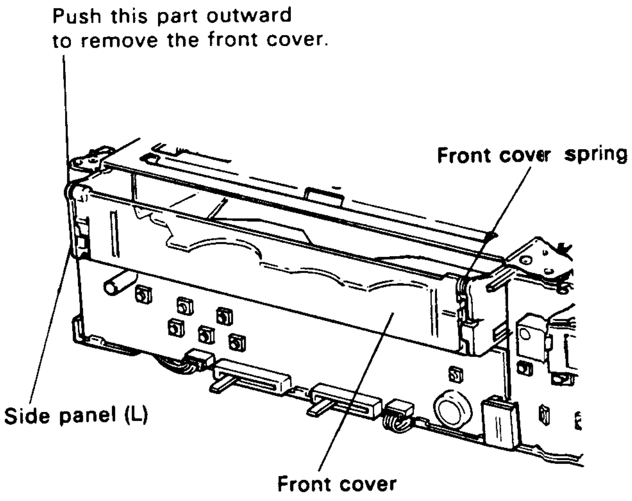

Push this part outward
to remove the front cover.
Front cover spring
Side panel (L)
Front cover

Fig.4-2

4-3. MODE SENSOR CIRCUIT BOARD (Figure 4-3)

(1) Remove the bottom cover. (Refer to Item 1-2.)
(2) Remove screw (1).
(3) Disconnect wire connector (2) to remove the mode sensor circuit board.

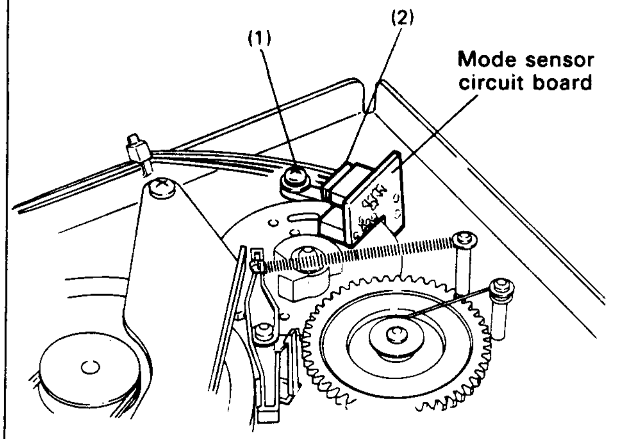

(1)
(2)
Mode sensor circuit board

Fig. 4-3

4-4. END SENSOR CIRCUIT BOARD (Figure 4-4)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Remove the cassette housing assembly. (Refer to Item 4-1.)
(3) Remove the solder from the two lead wires (1) of the REC Safety Switch located under the front cover.
(4) Release tab (2) toward the bottom, and lift the end sensor circuit board to remove.

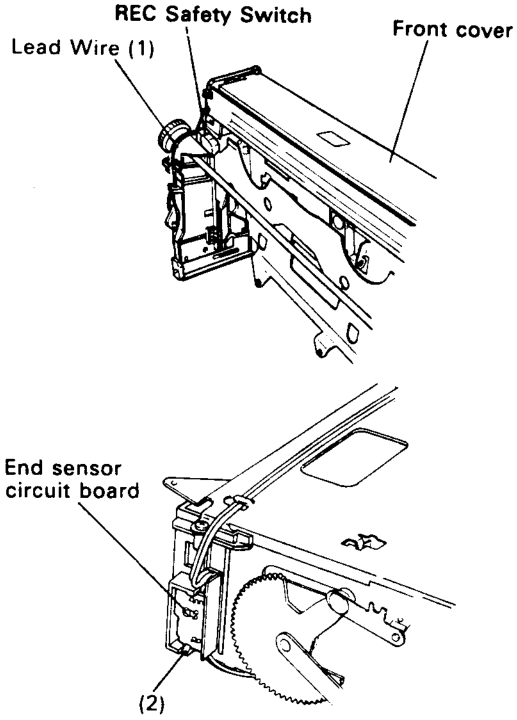

REC Safety Switch
Front cover
Lead Wire (1)
End sensor circuit board
(2)

Fig. 4-4

4-5. MECHA JUNCTION CIRCUIT BOARD (Figure 4-5)

(1) Remove the bottom cover. (Refer to Item 1-2.)
(2) Disconnect flat cable (1).
(3) Disconnect connector (2) and junction (3).
(4) Release tabs (4) and lift the circuit board a little to remove.

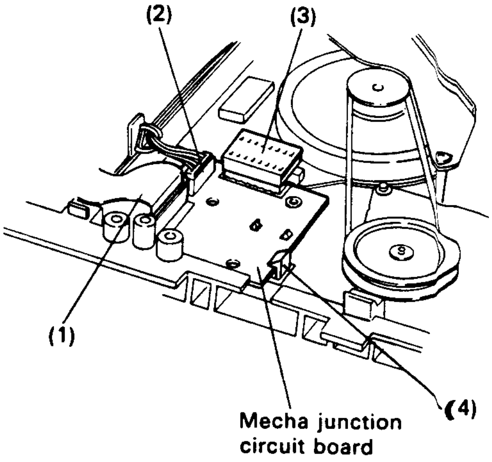

(2)
(3)
(1)
Mecha junction circuit board
(4)

Fig. 4-5

2. CIRCUIT BOARD LOCATIONS

2-1. TOP VIEW

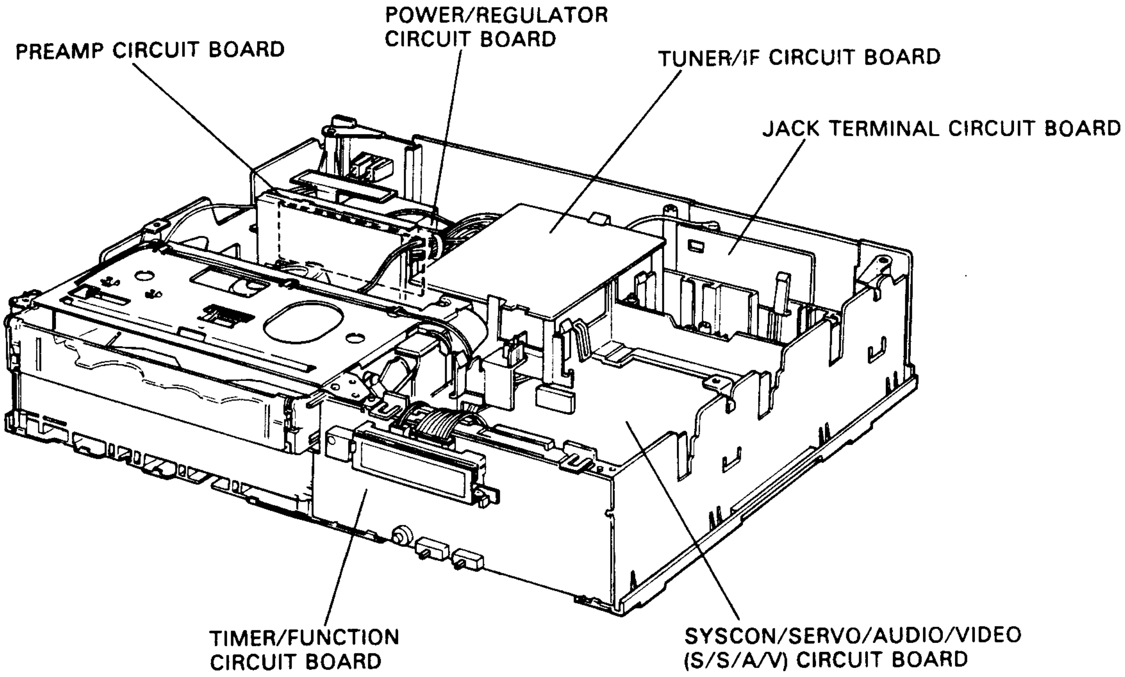

PREAMP CIRCUIT BOARD
POWER/REGULATOR CIRCUIT BOARD
TUNER/IF CIRCUIT BOARD
JACK TERMINAL CIRCUIT BOARD
TIMER/FUNCTION CIRCUIT BOARD
SYSCON/SERVO/AUDIO/VIDEO (S/S/A/V) CIRCUIT BOARD
Front side

Fig. 2-1

2-2. BOTTOM VIEW

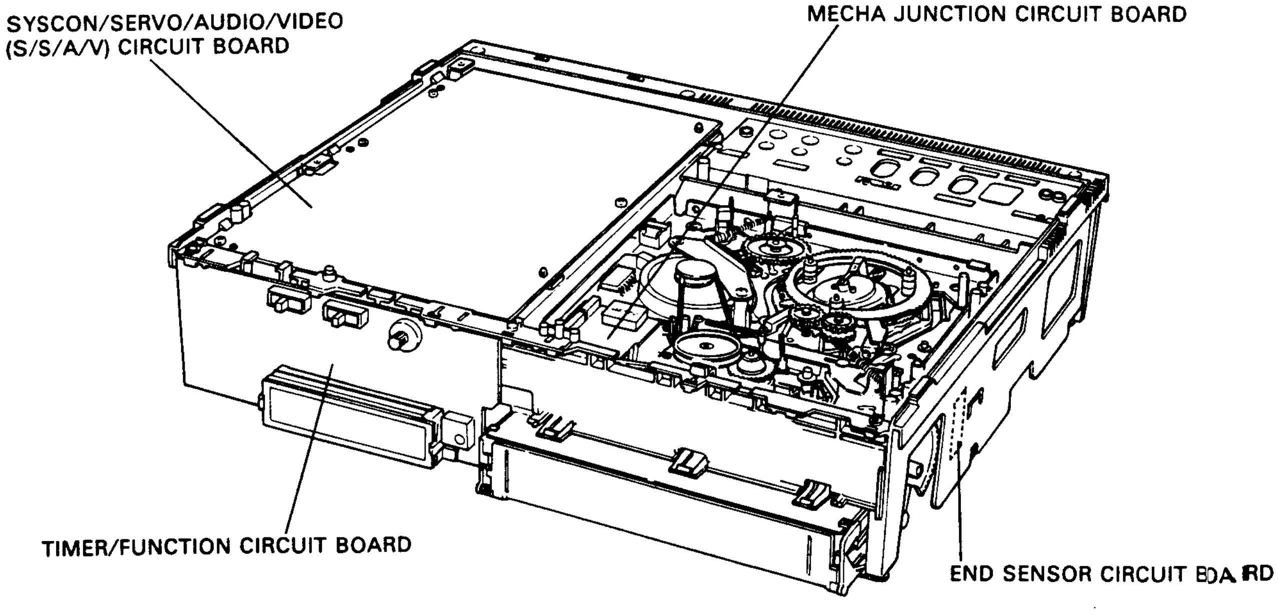

SYSCON/SERVO/AUDIO/VIDEO (S/S/A/V) CIRCUIT BOARD
MECHA JUNCTION CIRCUIT BOARD
TIMER/FUNCTION CIRCUIT BOARD
END SENSOR CIRCUIT BOARD
Front side

Fig.2-2

3. REMOVING THE CIRCUIT BOARDS

3-1. TIMER/FUNCTION CIRCUIT BOARD (Figure 3-1)

(1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
(2) Disconnect two wire connectors (1) from the circuit board.
(3) Release two tabs (2), and lift the circuit board to remove.

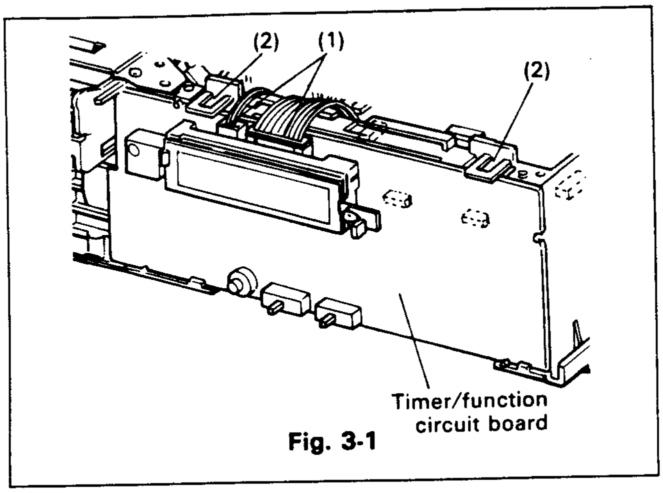

(2)
(1)
(2)
Timer/function circuit board

Fig. 3-1

3-2. PREAMP CIRCUIT BOARD (Figure 3-2)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Remove two screws (1).
(3) Disconnect three wire connectors (2) from the preamp circuit board.

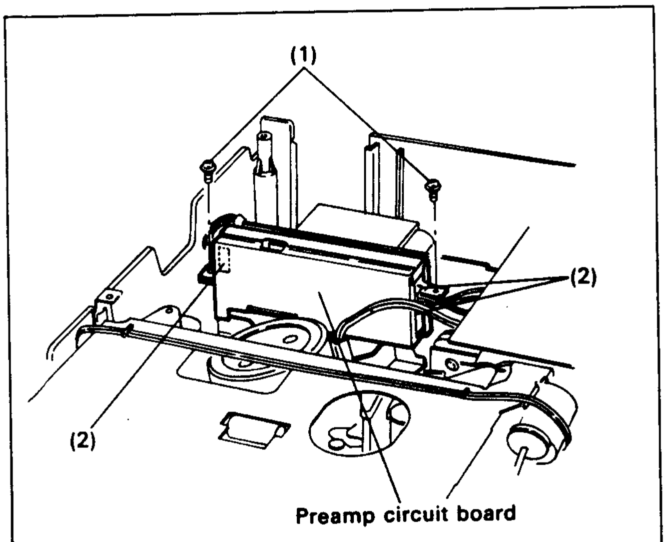

(1)
(2)
(2)
Preamp circuit board

Fig. 3-2

Note: Be very careful not to damage the drum head circuit board when removing the preamp circuit board.

3-3. TUNER/IF CIRCUIT BOARD (Figure 3-3)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Remove three screws (1) from the tuner/IF circuit board.
(3) Release two tabs (2).
(4) Lift and tilt the tuner/IF circuit board toward the rear panel.
(5) Disconnect the 75-ohm VHF cable (3).
(6) Disconnect three wire connectors (4).

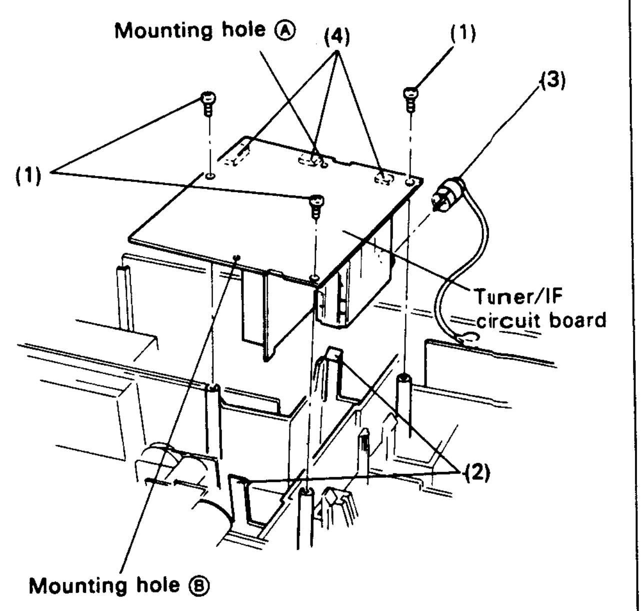

Mounting hole Ⓐ
(4)
(1)
(3)
(1)
Tuner/IF circuit board
(2)
Mounting hole Ⓑ

Fig. 3-3

Note: To install the circuit board, align the circuit board-mounting pins with mounting holesⒶ and Ⓑ.

3-4. POWER/REGULATOR CIRCUIT BOARD (Figure 3-4)

1. (1) Remove the top cover. (Refer to Item 1-1.)
2. (2) Remove the bottom cover. (Refer to Item 1-2.)
3. (3) Remove the tuner/IF circuit board. (Refer to Item 3-3.)
4. (4) Disconnect four wire connectors (1) from the power/regulator circuit board.
5. (5) Remove five screws (2).
6. (6) Lift the power/regulator unit together with the AC outlet plate to remove.
7. (7) Remove four screws (3) to release the power/regulator circuit board from the base.

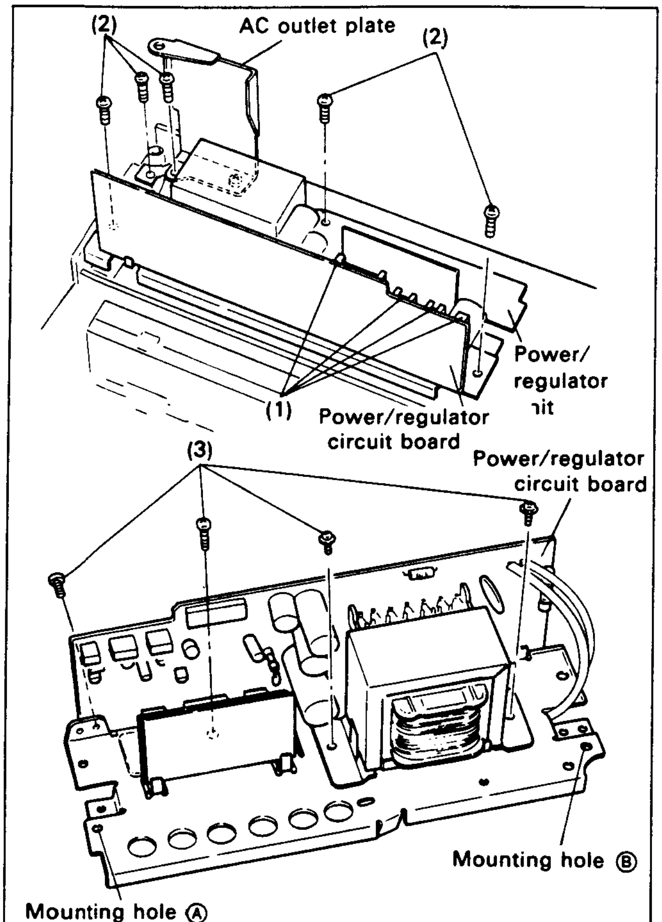

(2)
AC outlet plate
(2)
Power/
regulator
nit
(1)
Power/regulator
circuit board
(3)
Power/regulator
circuit board
Mounting hole Ⓑ
Mounting hole Ⓐ

Fig. 3-4

Note: To install the power/regulator unit, align the mounting pins with mounting holes Ⓐ and Ⓑ.

3-5. JACK TERMINAL CIRCUIT BOARD (Figure 3-5)

1. (1) Remove the top cover. (Refer to Item 1-1.)
2. (2) Disconnect the 75-ohm cable (1).
3. (3) Disconnect wire connector (2).
4. (4) Pull the terminal plate up and remove the jack terminal circuit board.
5. (5) Disconnect wire connector (3).

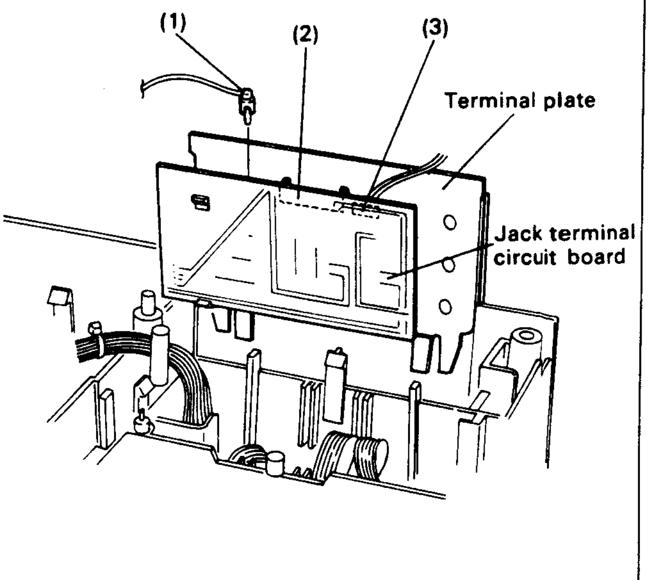

(1)
(2)
(3)
Terminal plate
Jack terminal
circuit board

Fig. 3-5

Notes:

1. The jack terminal circuit board is united with the terminal plate.
2. To install the jack terminal unit, fit the terminal plate into the mounting position until it clicks in the locked position.

3-6. S/S/A/V CIRCUIT BOARD (Figure 3-6-1)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) Remove the bottom cover. (Refer to Item 1-2.)
(3) Disconnect eighteen wire connectors (1) from the S/S/A/V circuit board from inside the VCR.
(4) Remove four screws (2) from the S/S/A/V circuit board.
(5) Release three tabs (3).
(6) Release the circuit board from the two slide hinges (4).

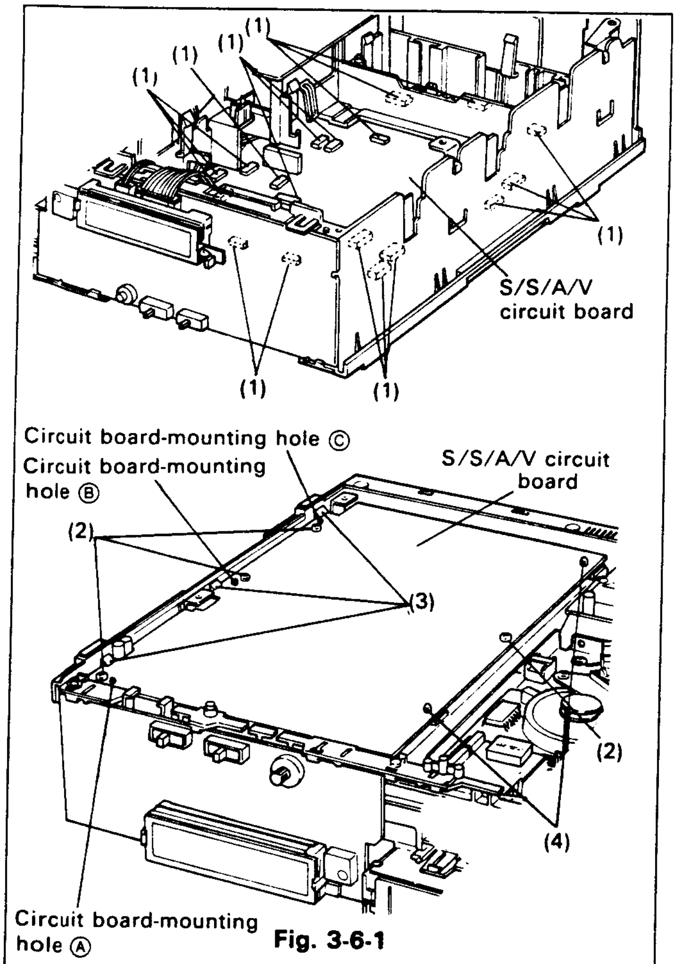

(1)
(1)
(1)
(1)
(1)
S/S/A/V circuit board
(1)
(1)
Circuit board-mounting hole Ⓒ
Circuit board-mounting hole Ⓑ
S/S/A/V circuit board
(2)
(3)
(2)
(4)
Circuit board-mounting hole Ⓐ

Fig. 3-6-1

To install the circuit board, align the circuit board-mounting pins with mounting holes Ⓐ, Ⓑ and Ⓒ.

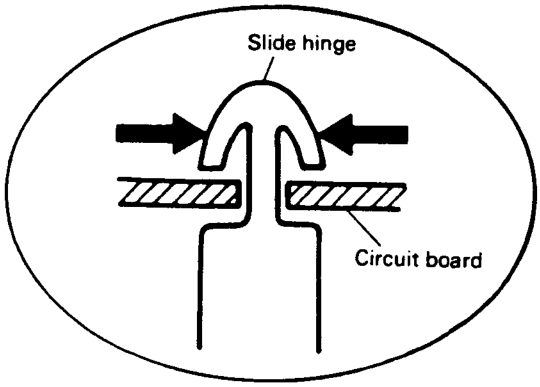

Slide hinge
Circuit board

Fig. 3-6-2

Note: When removing the circuit board from each slide hinge, use pliers to squeeze these hinges in the directions of the arrows shown in the figure to release.

4. REMOVING THE CASSETTE MECHANISM

4-1. REMOVING THE CASSETTE HOUSING ASSEMBLY (Figures 4-1-1, 4-1-2)

(1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
(2) Remove two screws (1). Pull up the rear part of the cassette housing assembly and pull backwards 4-5 mm carefully to release the claw of the front side of the cassette housing assembly from the chassis. Then carefully pull it out upwards.
(3) Disconnect connector (2)
(4) To remove the cassette loading circuit board, release four tabs (3).

Note: The removed screws should be used again to reinstall the cassette housing assembly. Never use screws other than removed ones.

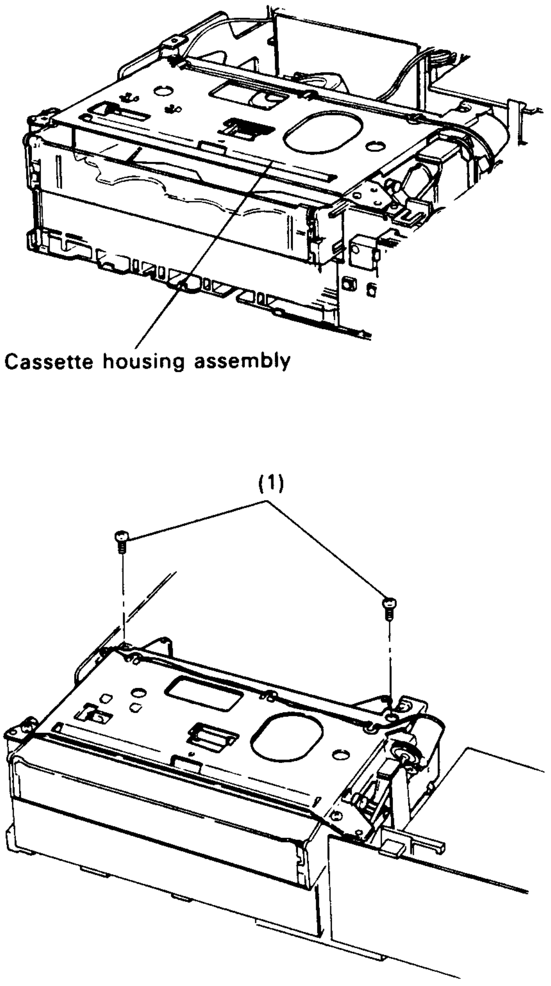

Cassette housing assembly
(1)

Fig. 4-1-1

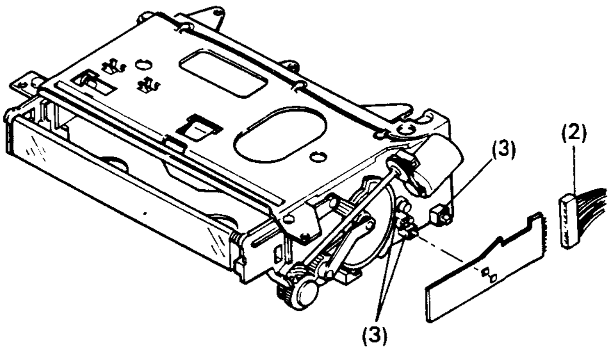


Fig. 4-1-2

4-2. FRONT COVER (Figure 4-2)

(1) Push the front cover into the cassette housing.
(2) Push the side panel (L) outward, and remove the front cover, together with the front cover spring.

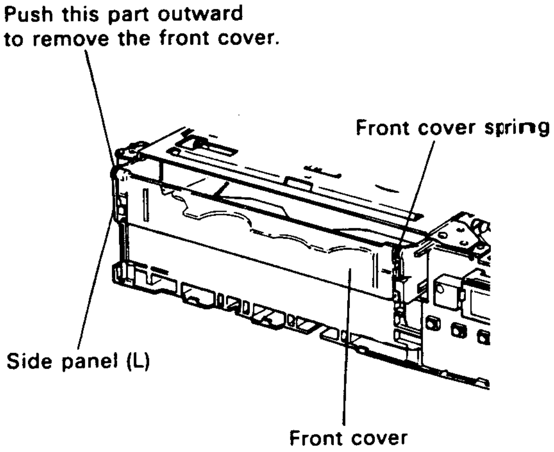

Push this part outward
to remove the front cover.
Front cover spring
Side panel (L)
Front cover

Fig. 4-2

4-3. MODE SENSOR CIRCUIT BOARD (Figure 4-3)

(1) Remove the bottom cover. (Refer to Item 1-2.)
(2) Remove screw (1).
(3) Disconnect wire connector (2) to remove the mode sensor circuit board.

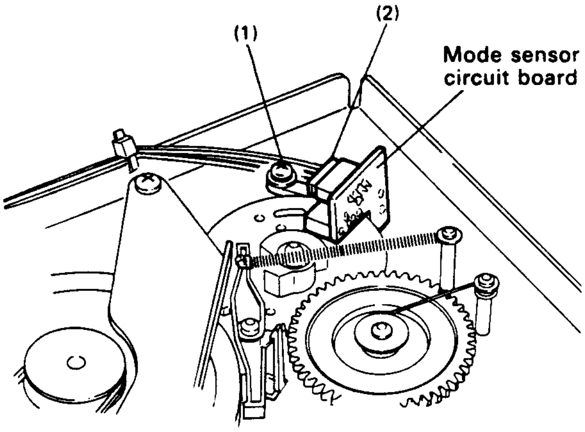

(1)
(2)
Mode sensor circuit board

Fig. 4-3

4-4. END SENSOR CIRCUIT BOARD (Figure 4-4)

(1) Remove the top cover. (Refer to Item 1-1.)
(2) According to Item 4-1, remove the cassette housing assembly.
(3) Remove the solder from the two lead wires (1) of the REC Safety Switch located under the front cover.
(4) Release tab (2) toward the bottom, and lift the end sensor circuit board to remove.

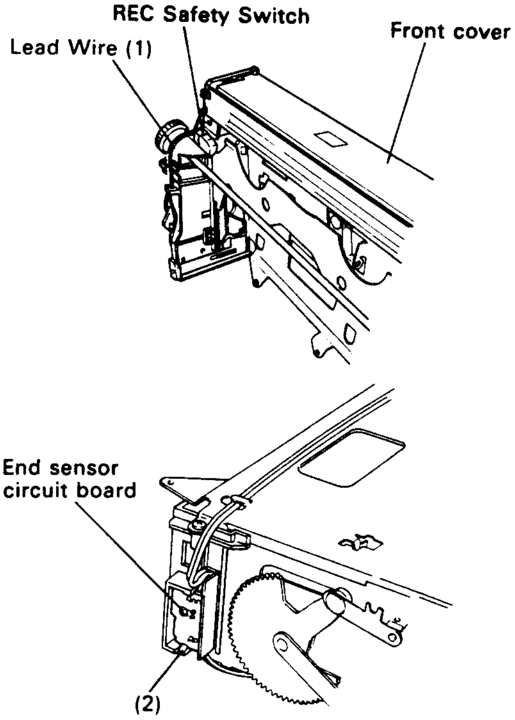

REC Safety Switch
Lead Wire (1)
Front cover
End sensor circuit board
(2)

Fig. 4-4

4-5. MECHA JUNCTION CIRCUIT BOARD (Figure 4-5)

(1) Remove the bottom cover. (Refer to Item 1-2.)
(2) Disconnect flat cable (1).
(3) Disconnect connector (2) and junction (3).
(4) Release tab (4) and lift a little circuit board to remove.

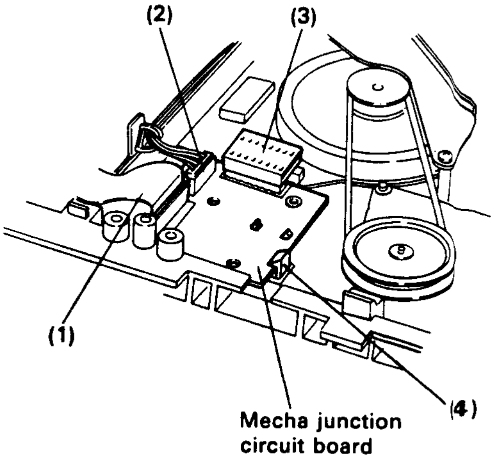

(2)
(3)
(1)
Mecha junction circuit board
(4)

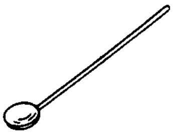
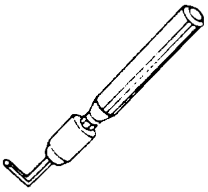
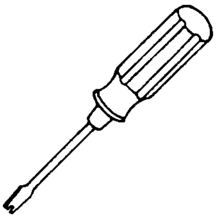
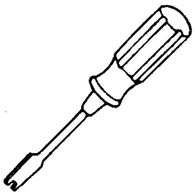
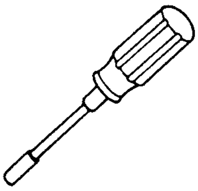
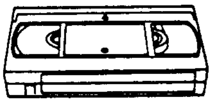
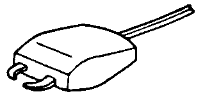
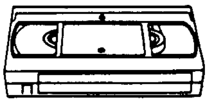
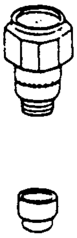
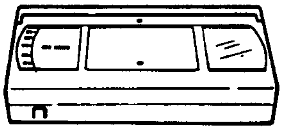
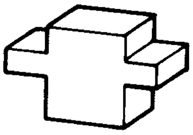
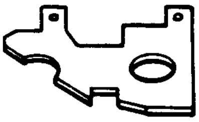
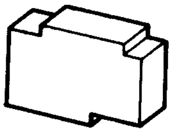
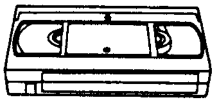
Fig. 4-5

SECTION 3 (N9053G/N9055G)
ADJUSTMENT

NOTE:
Circuit baords in SECTION 3 are applied as follows.
S/S/A/V for N9053G
S/S/V for N9055G

1. MECHANICAL ADJUSTMENT

1-1. SERVICING JIGS AND TOOLS

J-1 Checking mirror For tape flow check and adjustment procedures  16950871	J-2 Hexagonal driver For guide roller screw  16951281	J-3 Adjustment driver For guide roller  16951291	J-4 Adjustment driver For tapered pin of ACE head  16951301
J-5 Box driver For ACE head, guide pole and reverse pin  16951311	**J-6** **Alignment tape (MH-2)** **Overall adjusting of picture quality and tracking** **MH-2 79V20196** 	J-7 Cleaning liquid (isopropyl alcohol) cleaning cloth for cleaning NOTE* 16950001	J-8 Head demagnetizer demagnetizing audio heads  NOTE*
J-9 Cleaning cassette tape For cleaning video heads  NOTE*	J-10 ● Torque meter (600g/cm) Ass'y 79V20199 ● Torque meter 79V20200 (600g/cm) ● Torque meter adaptor 79V21508 (Substitute 79V20201) 	J-11 Back tension cassette gauge 79V20202 	J-12 Height Gauge AM-2 Jig  16951431
J-13 Master Plane B Jig  16951381	J-14 Height Gauge BM-2 Jig  16951441	**J-15** **Cassette tape (E-120)** **For checking tape path**  NOTE*	

Note: This item not available from parts dept.

Fig. 1-1

1-2. MECHANISM ASSEMBLY

1-2-1 Removing the mechanism assembly (Figure 1-2)

(1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3)

(2) Remove the tuner/IF circuit board. (Refer to Item 3-4.)

(3) Remove the preamp circuit board. (Refer to Item 3-3.)

(4) Remove the cassette housing assembly. (Refer to Item 4-1.)

Note: The removed screws should be used again to reinstall the cassette housing assembly. Never use screws other than removed ones.

(5) Disconnect wire connector and drum heater (yellow) of the rotary drum assembly.

(6) Remove two screws of the lead wires with ground lug.

(7) Disconnect two connectors from the ACE head assembly.

(8) Disconnect connectors from the full erase head.

(9) Disconnect the flat cable from the mecha junction circuit board.

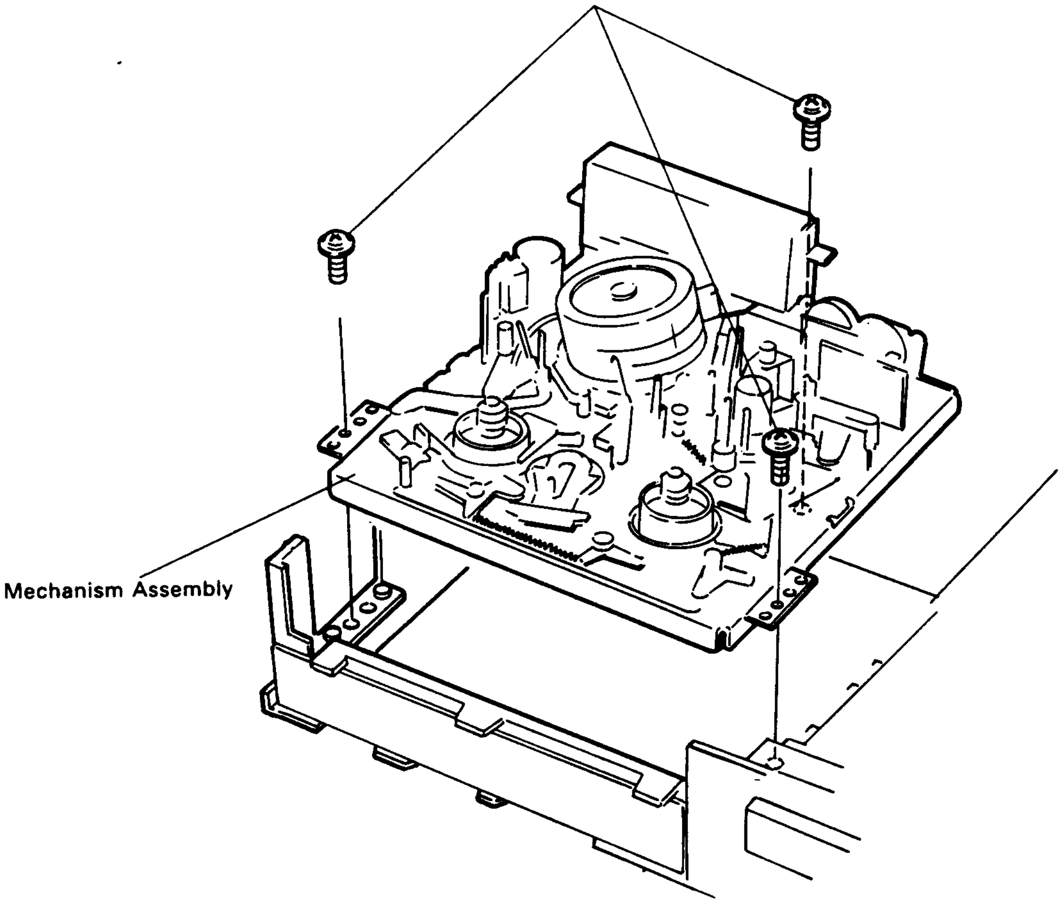


Fig. 1-2

1-2-2 Mechanism parts locations

Top view

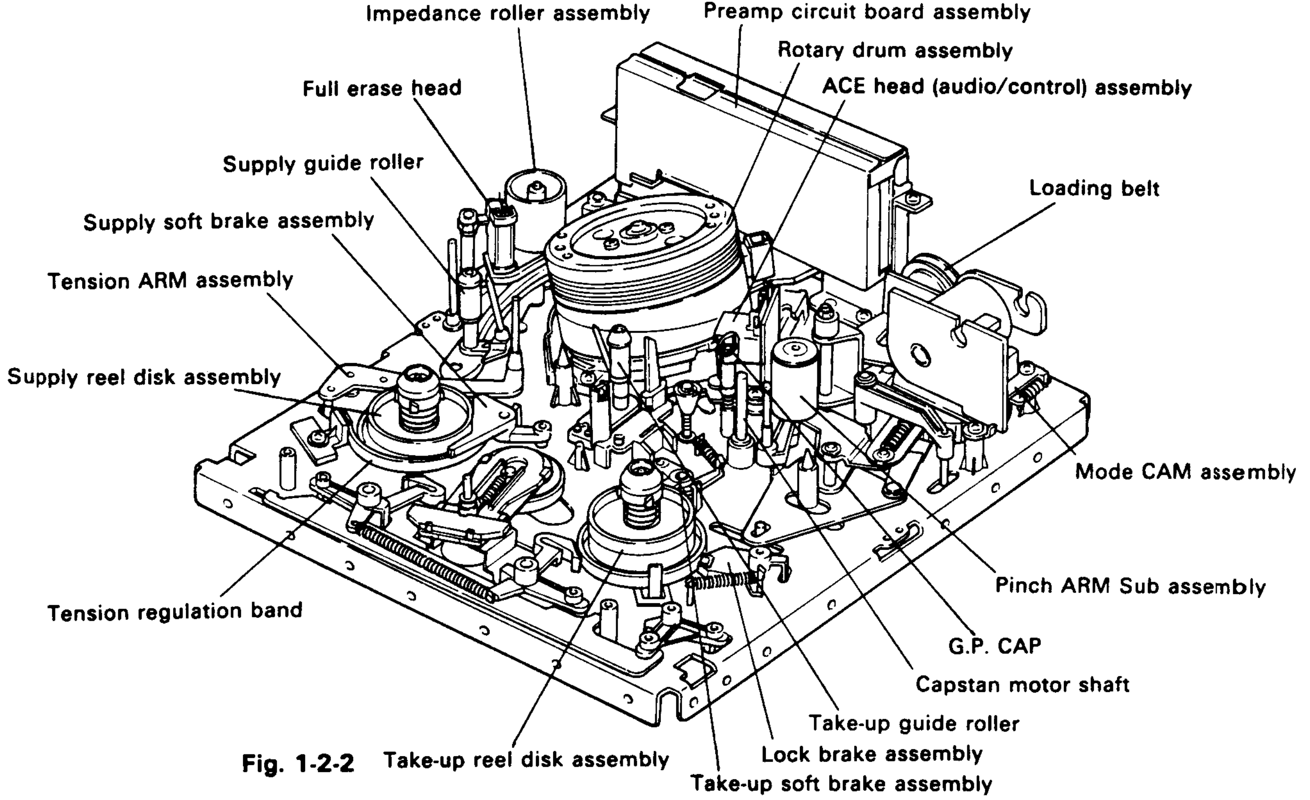

Impedance roller assembly
Preamp circuit board assembly
Rotary drum assembly
Full erase head
ACE head (audio/control) assembly
Supply guide roller
Loading belt
Supply soft brake assembly
Tension ARM assembly
Supply reel disk assembly
Mode CAM assembly
Pinch ARM Sub assembly
Tension regulation band
G.P. CAP
Capstan motor shaft
Take-up guide roller
Take-up reel disk assembly
Lock brake assembly
Take-up soft brake assembly

Fig. 1-2-2

Bottom view

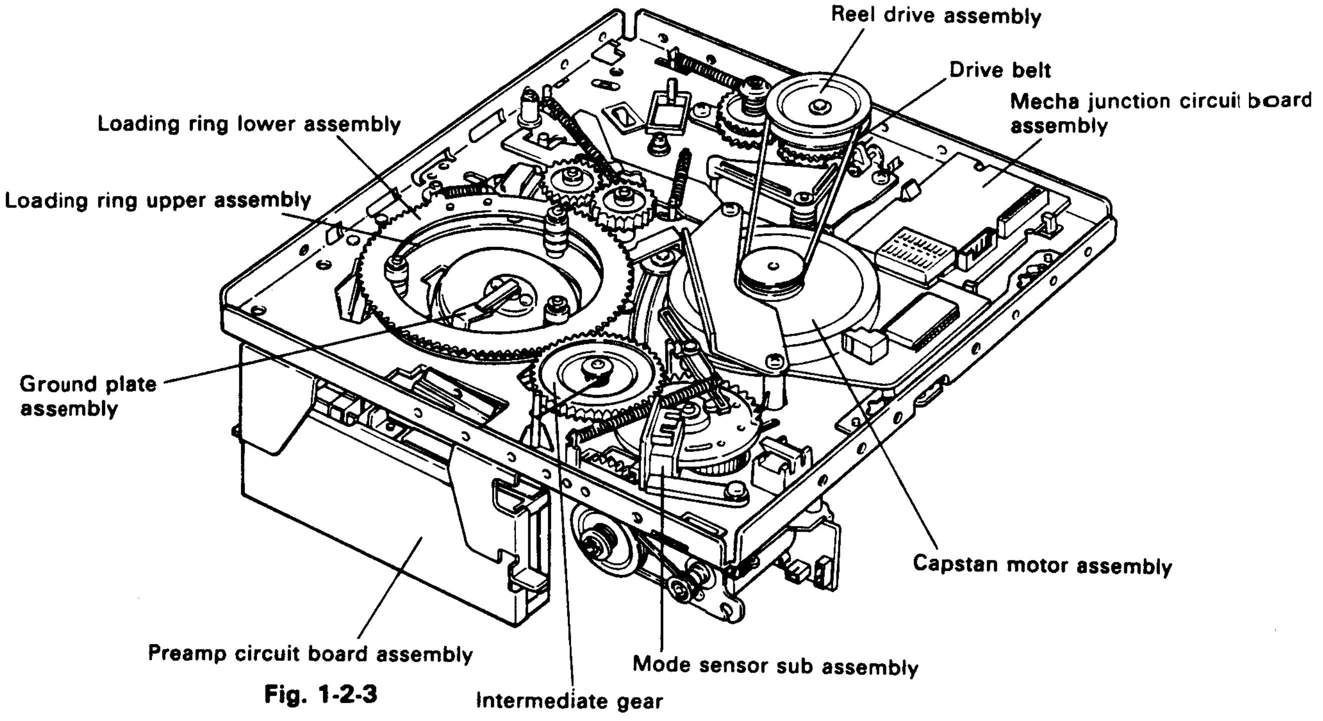

Reel drive assembly
Drive belt
Mecha junction circuit board assembly
Loading ring lower assembly
Loading ring upper assembly
Ground plate assembly
Capstan motor assembly
Preamp circuit board assembly
Mode sensor sub assembly
Intermediate gear

Fig. 1-2-3

1-3. BEFORE DISASSEMBLING PARTS ON THE CHASSIS (Figure 1-3)

Do not turn the adjusting screws shown below when removing adjacent parts.

(1) Supply guide pole height adjusting nut.
(2) Take-up/supply guide roller height adjusting screw.
(3) ACE Head X value adjusting nut.
(4) ACE Head tilt adjusting screw.
(5) ACE Head height adjusting nut.
(6) ACE Head azimuth adjusting screw.
(7) Take-up guide pole height adjusting nut (cap per).
(8) Tension band fixing screw.
(9) Reverse pin height adjusting nut.
(10) Slant pole adjusting screw.

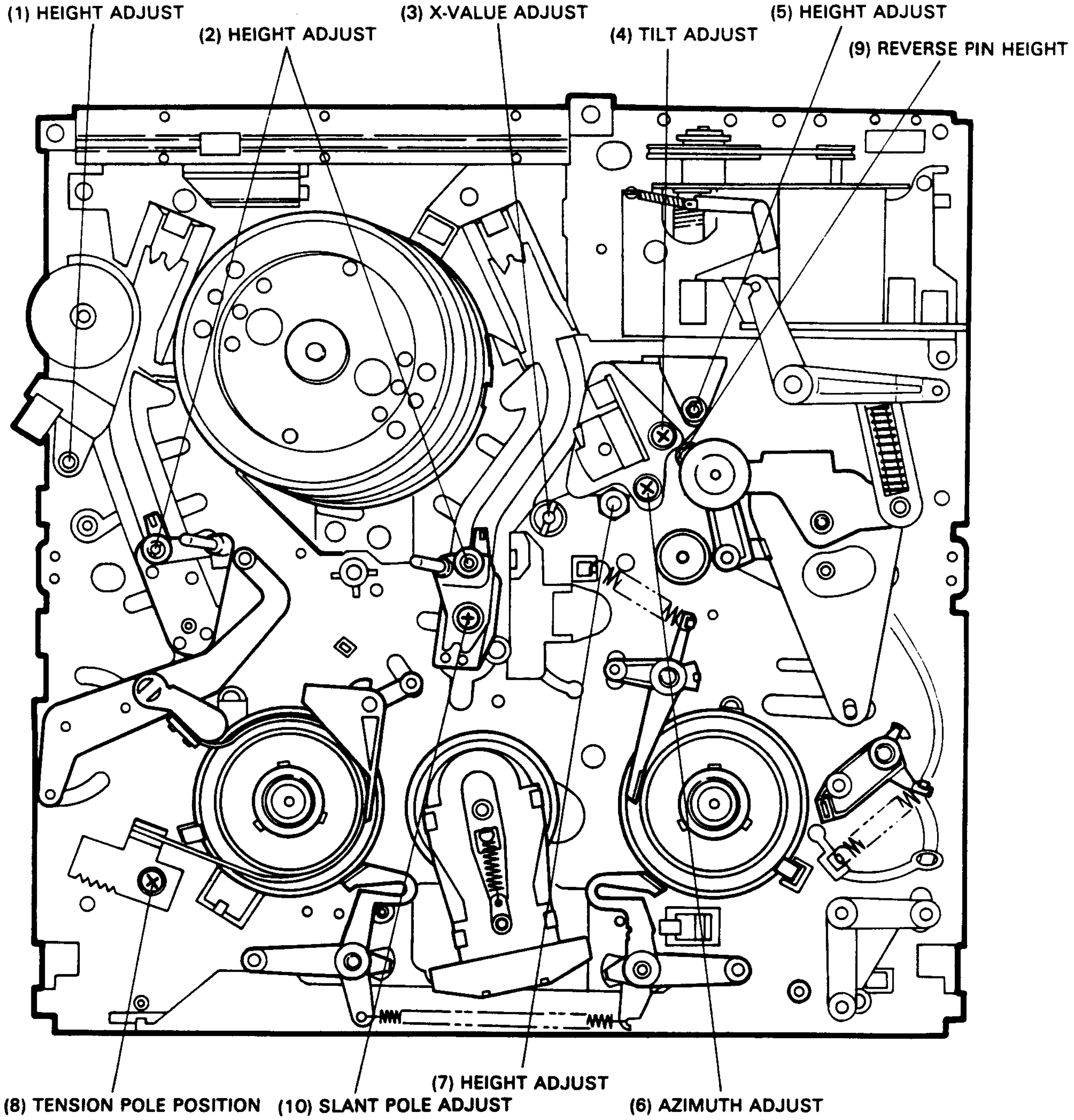

(1) HEIGHT ADJUST
(2) HEIGHT ADJUST
(3) X-VALUE ADJUST
(4) TILT ADJUST
(5) HEIGHT ADJUST
(9) REVERSE PIN HEIGHT
(7) HEIGHT ADJUST
(8) TENSION POLE POSITION
(10) SLANT POLE ADJUST
(6) AZIMUTH ADJUST

Fig. 1-3

Note: When replacing parts and removing the nylon nut for adjustment, be sure to use the removed nylon nut.

1-4. BEFORE ADJUSTING THE MECHANISM (Figure 1-4)

"Adjustment procedures" have been written as a guide to achieve proper operation after replacing the mechanism parts (when required by normal wear and tear or accidental damage).
Since the mechanism adjustment procedures are closely related to the adjustment of the electrical circuitry, and form the basis of the electrical circuitry adjustment procedures, carefully follow the mechanism procedures by observing the proper precautions.

1-5. SERVICING PRECAUTIONS (Figure 1-5)

(1) Pay special attention to how and where the unit is placed when removing the exterior casing of the unit, and when servicing with the circuit boards removed.
(2) Prevent the loss of screws by putting every removed screws into a container stored at one location.
(3) Since the surface area of the left and right sides of the unit is small, take special precautions when working with the unit standing on its side so that it will not fall over.
(3) When operating without using a cassette, short TP101 and TP102 on the S/S/A/V circuit board shown in Fig. 1-5 with a clip.

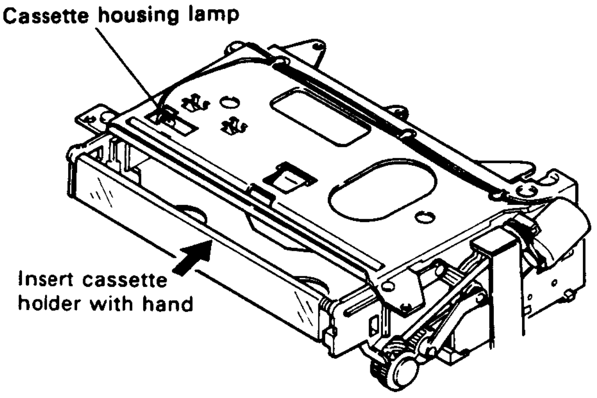


Fig. 1-4

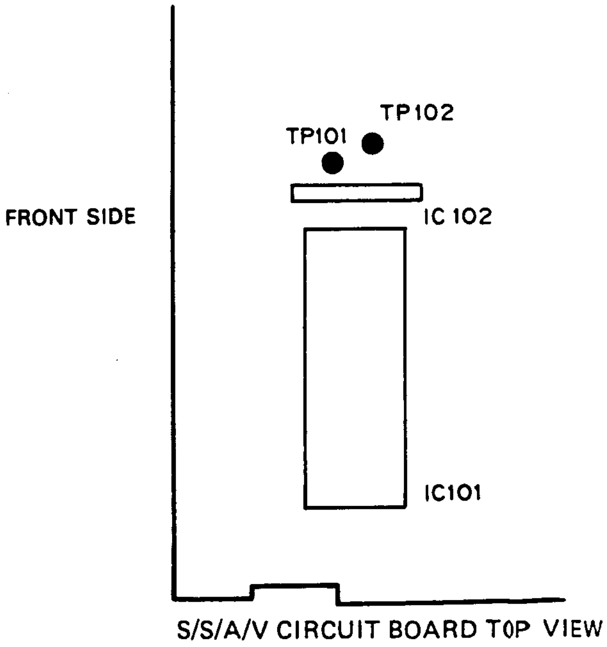


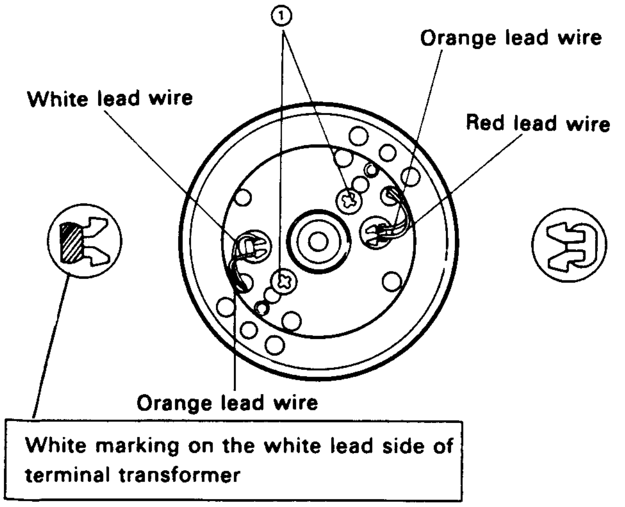
Fig. 1-5

1-6. REPLACEMENT OF UPPER ROTATING DRUM ASSEMBLY (Figure 1-6)

(1) Remove the solder from the four lead wires that connect the video heads to the terminal transformer. (Perform this removal quickly so as not to damage the insulation of the lead wires.)
(2) Remove two screws ①, then left the rotating drum assembly upward and remove it.
(3) Use alcohol (isopropyl) to clean the flange surface of the lower drum and the surface on the new ro-tating drum assembly that will come into contact with the flange. Position the rotating drum assembly so that the wire is aligned with the white marking on the shaded area of the terminal transformer, as shown in Fig. 1-6, then carefully slide it down into place.

Note:
1) Be sure not to touch the head tips, or strike and damage them.
2) If the rotating drum assembly should become hooked on some obstruction before it has been slid completely into place, do not attempt to force it. Remove it and try again.

(4) Tighten two screws ① alternately, then solder the four lead wires to their correct positions on the terminal transformer, and make sure that all connections are solid and secure.
(5) After the rotating drum assembly has been replaced, be sure to carry out the following checks and adjustments.
1) Control head phase adjustment (refer to Section 3-4)
2) Playback switching point adjustment (refer to Section 3-1).
3) Checking and adjustment of entire video and audio systems (refer to Sections 4-2, 4-3 and 4-5).



White marking on the white lead side of terminal transformer

Fig. 1-6

1-7. REPLACEMENT OF DRUM ASSEMBLY (Figure 1-7)

(1) Remove the preamp circuit assembly. (Refer to Item 3-3.)
(2) Remove the drum assembly connector ① and drum heater ②. (When removing connector ① hold down the slanting line part of the print substrate.)
(3) Remove the three screws ③ and then remove the drum assembly.

Note: Do not touch the drum head tips or damage the drum assembly during this procedure.

(4) Follow the above instructions in reverse order to install the drum assembly.

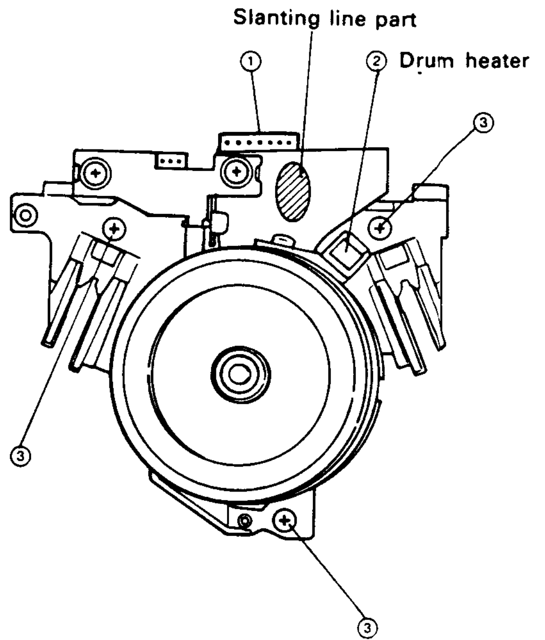


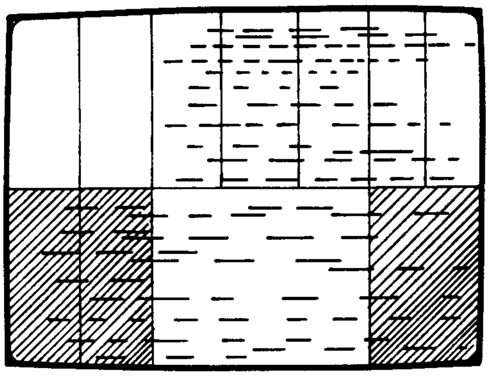
Fig. 1-7-1

(5) After replacing, check and adjust as follows.
1) Adjust tape path. (Refer to Section 2.)
2) Adjust for compatibility. (Refer to Section 3.)
3) Make necessary adjustments to the servo system, video system, and audio system.
(Refer to Sections 4-2, 4-3 and 4-5.)

NOTE (N9053G only)

The following items must be checked after replacing the drum assembly.
When you have replaced the drum assembly of the unit that do not have the capacitor *C654 0.022μF on the PCB S/S/V or S/S/A/V, make sure whether there is a phenomenon described as follows. (Refer to the illustration below.)
In some cases, the noise with colored dots appears on the entire picture screen as shown in the illustration. In this case add a ceramic capacitor 0.022μF between the pin (3) and pin (4) of the drum motor connector CN604 on the PCB S/S/V or S/S/A/V.
The exactly same phenomenon may possibly appear when you have replaced the PCB S/S/V or S/S/A/V, cure it in the same manner as above.

***Note**: C654 is the capacitor connected between the pins (3) and (4) of the connector CN604 on the PCB S/S/V or S/S/A/V.



(6) Handling of Service Drum Package
Remove the drum from the inner box as shown in the figure below. Remove the three black screws from inside of the box, remove the board, and then remove the drum assembly.

Note:
The drum assembly is precisely adjusted. Handle carefully to prevent it from becoming dirty, scratched, damaged or deformed in any way.

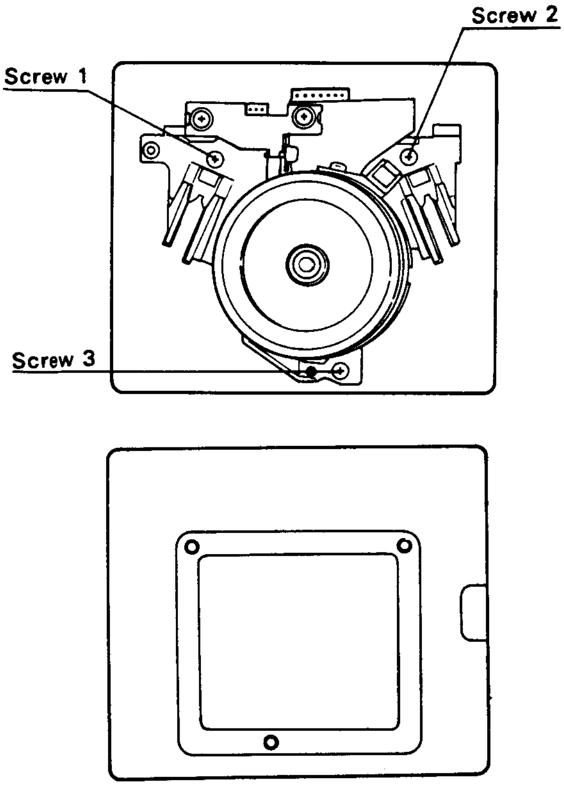

Screw 2
Screw 1
Screw 3

Fig. 1-7-2

1-8. REPLACEMENT OF GROUND PLATE (Figure 1-8)

1. After first placing the unit on its side, open the bottom of the unit and remove the screw ①.
2. Use the screw ① to attach the ground plate so that its contact area is aligned with the center of the drum assembly shaft.

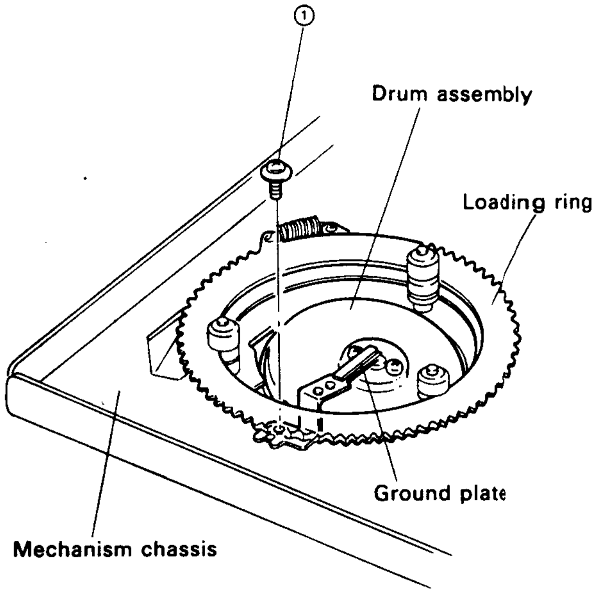

①
Drum assembly
Loading ring
Ground plate
Mechanism chassis

Fig. 1-8

1-9. AUDIO/CONTROL HEAD (Figure 1-9)

(1) Remove connectors Ⓐ and Ⓑ from the ACE head circuit board. (Remove wires from clamper ① first.)

(2) Use a box driver (J-5) to remove nylon nut ②.

(3) Rotate the ACE head assembly clockwise, so that it is slightly away from the taper pin, then pull upwards from the head pivot. Be careful during this procedure, because the (TC) spring applies pressure to the assembly.

(4) Replace the ACE head assembly and mount it into position by following the above procedure in reverse.

(5) After the ACE head assembly has been replaced, adjust the height of the new ACE head assembly.

(6) To adjust the height of the ACE Head, first place the Master Plane B Jig (J-13) on the chassis. Place the Height Gauge BM-2 Jig (J-14) on J-13 with the surface marked with an "H" facing up, and use the nylon nut box driver (J-5) to adjust to the same height as part A. Also, adjust the height of the tapered pin by following the same procedure as for the ACE Head. Use adjustment driver (J-4) to adjust to the same height as part B.

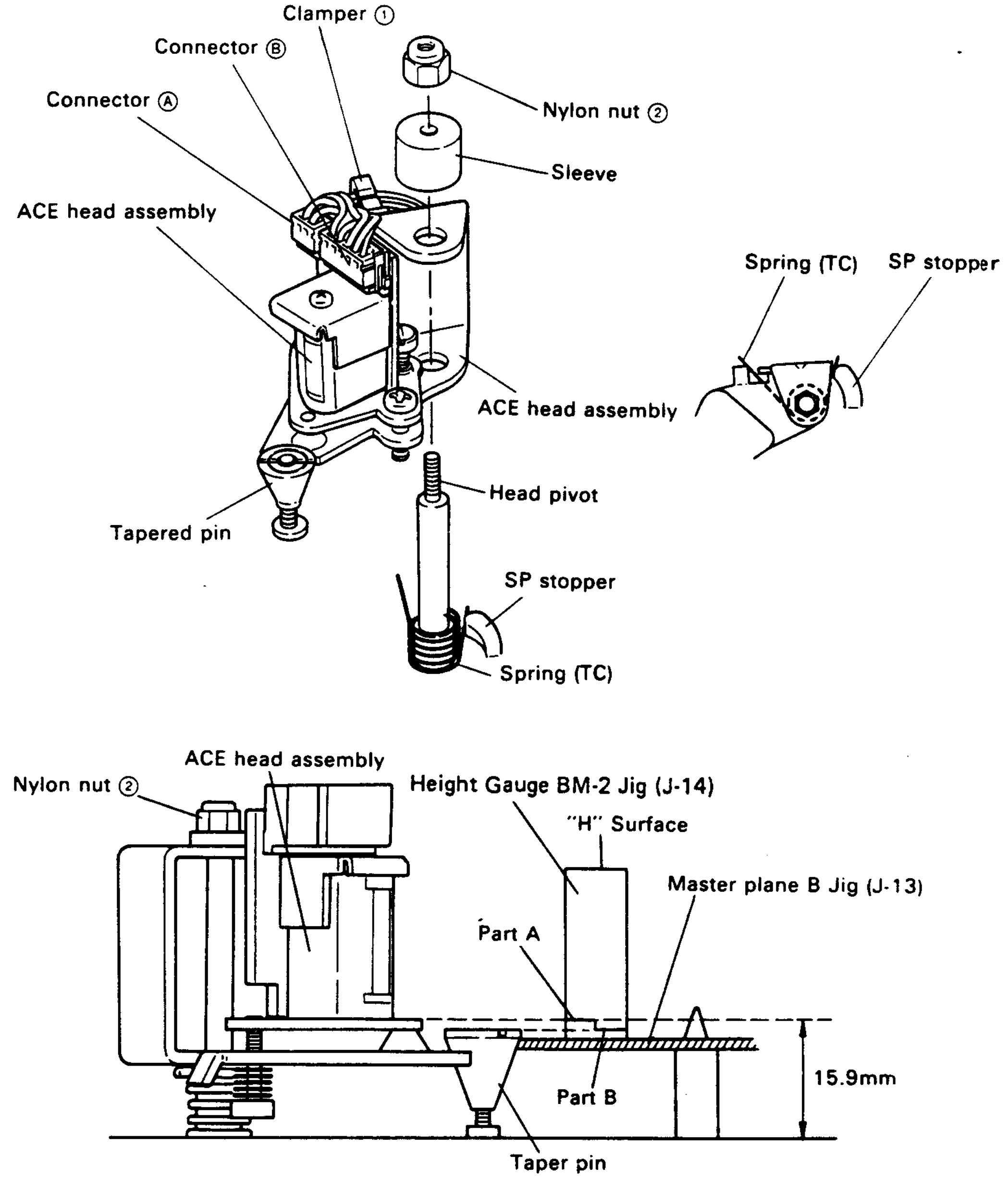

Clamper ①
Connector Ⓑ
Connector Ⓐ
Nylon nut ②
Sleeve
ACE head assembly
Spring (TC)
SP stopper
ACE head assembly
Head pivot
Tapered pin
SP stopper
Spring (TC)
ACE head assembly
Nylon nut ②
Height Gauge BM-2 Jig (J-14)
"H" Surface
Master plane B Jig (J-13)
Part A
15.9mm
Part B
Taper pin

Fig. 1-9

1-10. FULL ERASE HEAD (Figure 1-10)

(1) Remove the connector from the full erase head.
(2) First remove the nylon nut, then remove the upper flange, collar, lower flange, guide pin spring, and arm spring.
(3) Remove the impedance roller Sub assembly upwards.
(4) Remove the screw that secures the full erase head from underneath the impedance roller arm. Then remove the full erase head itself.
(5) Replace the full erase head and mount it into position, following the above procedure in reverse.

1-11. IMPEDANCE ROLLER SUB ASSEMBLY (Figure 1-10)

(1) Remove the nylon nut, the upper flange, collar, lower flange, guide pin spring, and arm spring.
(2) Remove the impedance roller Sub assembly upwards.
(3) Replace the impedance roller Sub assembly and mount it into position by following the above procedure in reverse.

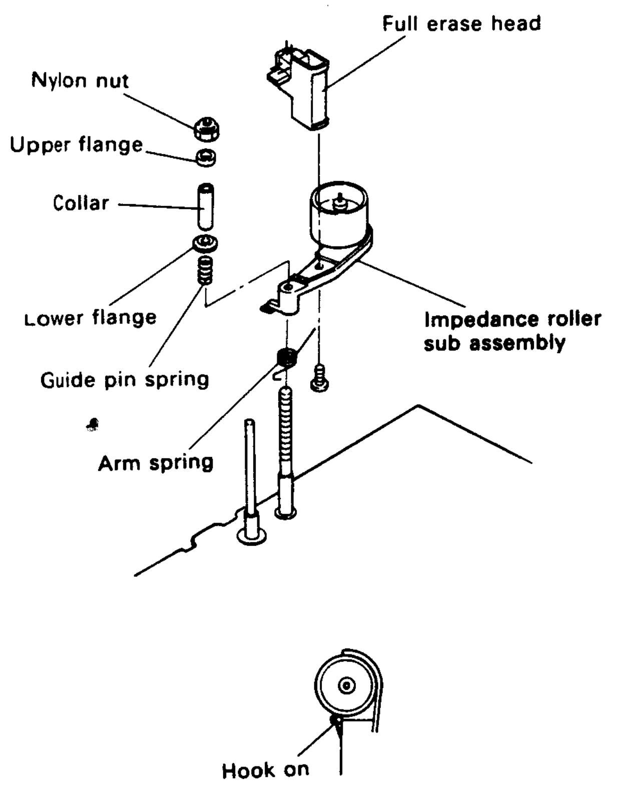

Full erase head
Nylon nut
Upper flange
Collar
Lower flange
Impedance roller sub assembly
Guide pin spring
Arm spring
Hook on

Fig. 1-10

1-12. INTERMEDIATE GEAR (Figure 1-11)

(1) Remove the retaining ring ①. Then remove intermediate gear spring ②.
(2) Remove the intermediate gear upwards.
(3) Replace intermediate gear and mount it into position by following the above procedure in reverse.

Notes:

1. As shown in Fig. 1-11, when loading phase holes Ⓐ of the upper and lower loading rings are aligned, attach intermediate gear so that the phase hole Ⓑ of intermediate gear and phase hole Ⓒ of the loading ring are facing each other, as shown in Fig. 1-11.
2. Be sure that intermediate gear spring ② is firmly secured to the lock of the intermediate gear.

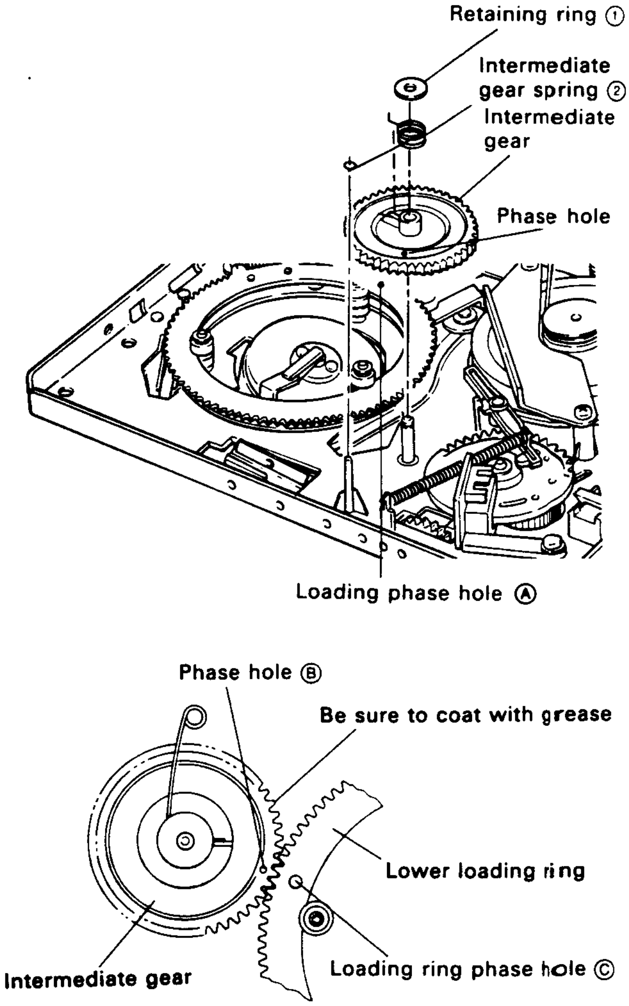

Retaining ring ①
Intermediate gear spring ②
Intermediate gear
Phase hole
Loading phase hole Ⓐ
Phase hole Ⓑ
Be sure to coat with grease
Lower loading ring
Intermediate gear
Loading ring phase hole Ⓒ

Fig. 1-11

1-13. S SLANT BASE/TU SLANT BASE SUB ASSEMBLY (Figure 1-12)

(1) Remove the preamp circuit board assembly (Refer to Item 3-3 of Section 2.)

(2) Remove connector ① of the drum assembly and drum heater ②. (Press the shaded area down with your fingers when replacing connector ① so as not to damage the printed circuit board. When attaching connector ①, be sure to support underneath the circuit board with your fingers.)

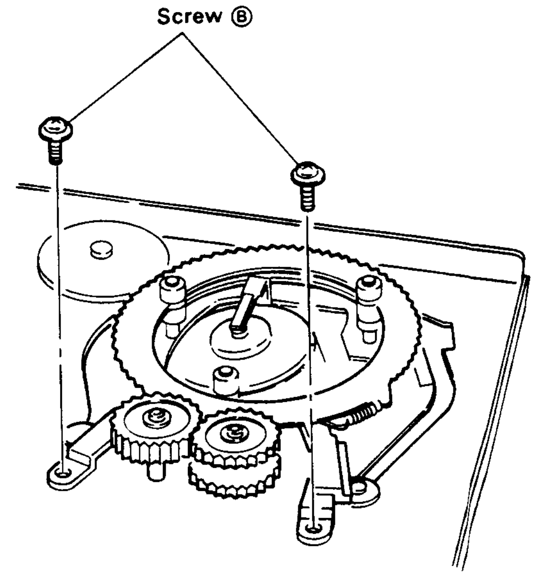
(3) Remove the three screws Ⓐ of the drum assembly, then remove the drum assembly upwards. (Be sure not to damage the head tips during this procedure).

(4) Remove the two screws Ⓑ, from the reverse side of the chassis.

(5) Slide and remove the S slant base Sub assembly from the chassis.

(6) Replace the S slant base Sub assembly and mount it into position by following the above procedure in reverse.

Note: The procedure for replacing the TU slant base Sub assembly is the same as that for removing the S slant base Sub assembly.



Reverse Side of Chassis

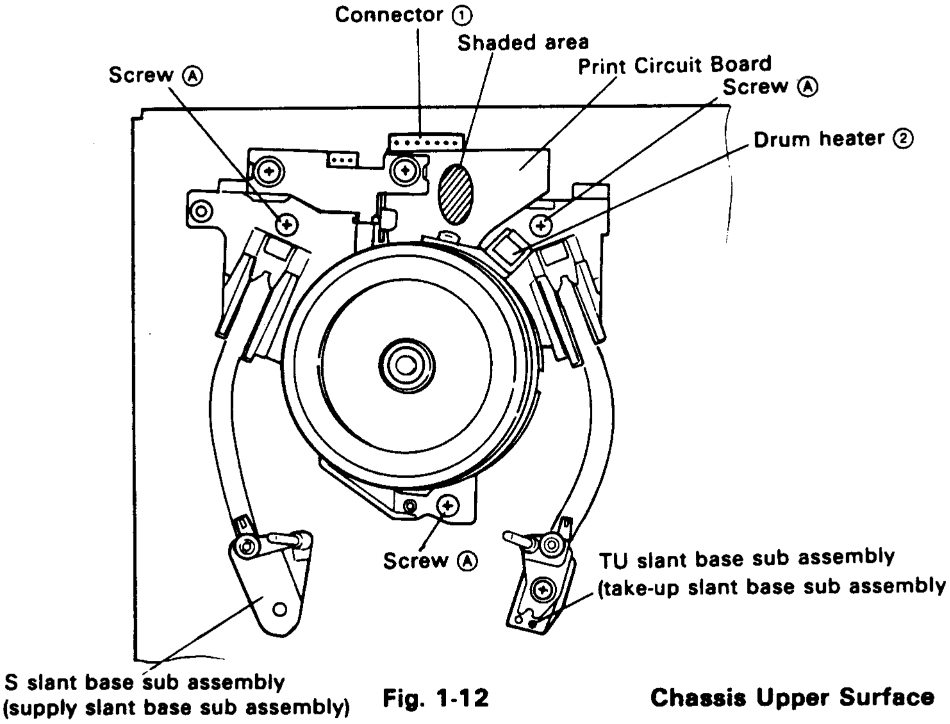

Connector ①
Shaded area
Print Circuit Board
Screw Ⓐ
Screw Ⓐ
Drum heater ②
Screw Ⓐ
TU slant base sub assembly
(take-up slant base sub assembly
S slant base sub assembly
(supply slant base sub assembly)

Fig. 1-12

Chassis Upper Surface

1-14. ENTIRE MODE CAM ASSEMBLY (Figure 1-13, 1-14)

(1) Remove the loading belt of the entire mode cam assembly. Rotate the worm drive pulley by hand so that the ① part of the S link arm assembly comes as far to the right as possible as shown in Fig. 1-13. (This position is the same as for the FF or the REW mode.) Remove connectors Ⓐ and Ⓑ of the mode motor circuit board. Next, remove the wires going through the groove of the circuit board. (During this procedure, be sure to remove the connectors of the ACE head first.)

(3) Remove retaining ring ②, and then remove the brake link arm assembly.

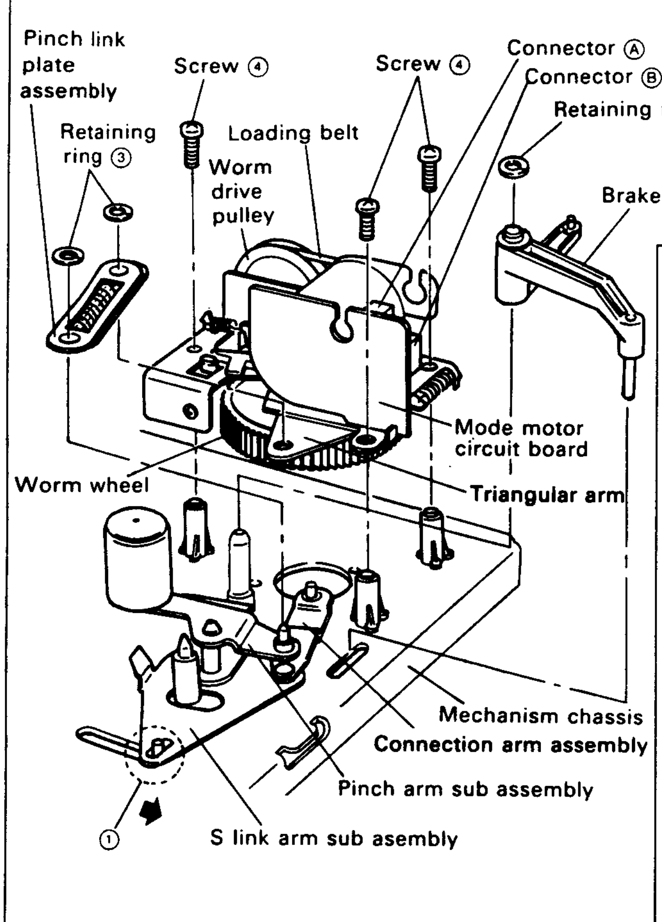
(4) Remove retaining rings ③, then remove the pinch link plate assembly.

(5) Remove three screws ④, then remove the entire mode cam assembly upwards.

(6) Replace the entire mode cam assembly and mount it into position by following the above procedure in reverse.

Notes:

1. When attaching the mode motor assembly on the chassis, first align the mode motor worm wheel hole Ⓓ with the mode motor base hole Ⓒ by rotating the worm drive pulley.
2. Attach the mode motor assembly so that the ① part of the S link arm assembly comes as far to the right as possible. At this time, be sure to confirm that the hole Ⓔ on the chassis, and holes Ⓒ and Ⓓ described above are in alignment.


Pinch link plate assembly
Screw ④
Screw ④
Connector Ⓐ
Connector Ⓑ
Retaining ring ②
Retaining ring ③
Loading belt
Worm drive pulley
Brake link arm assembly
Mode motor circuit board
Worm wheel
Triangular arm
Mechanism chassis
Connection arm assembly
Pinch arm sub assembly
①
S link arm sub asembly

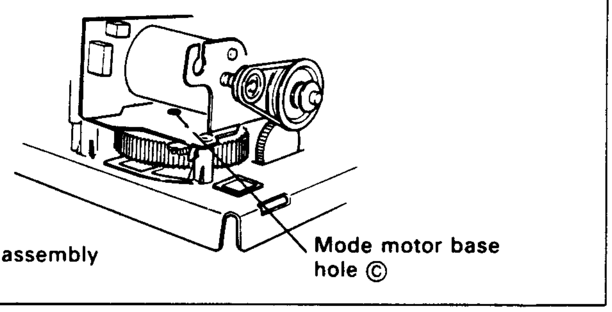

Mode motor base hole Ⓒ

Fig. 1-13.

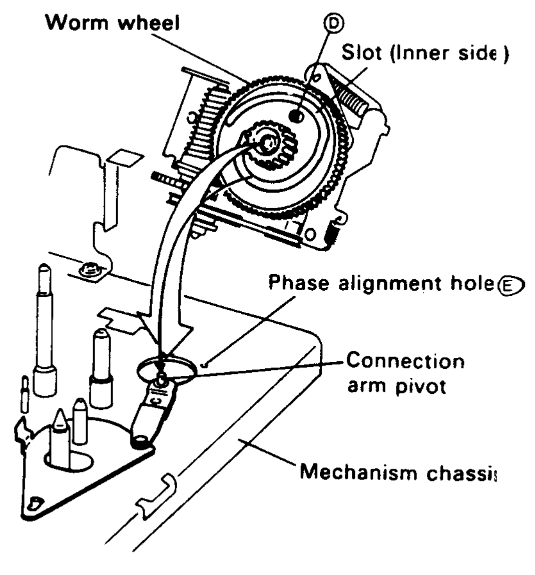
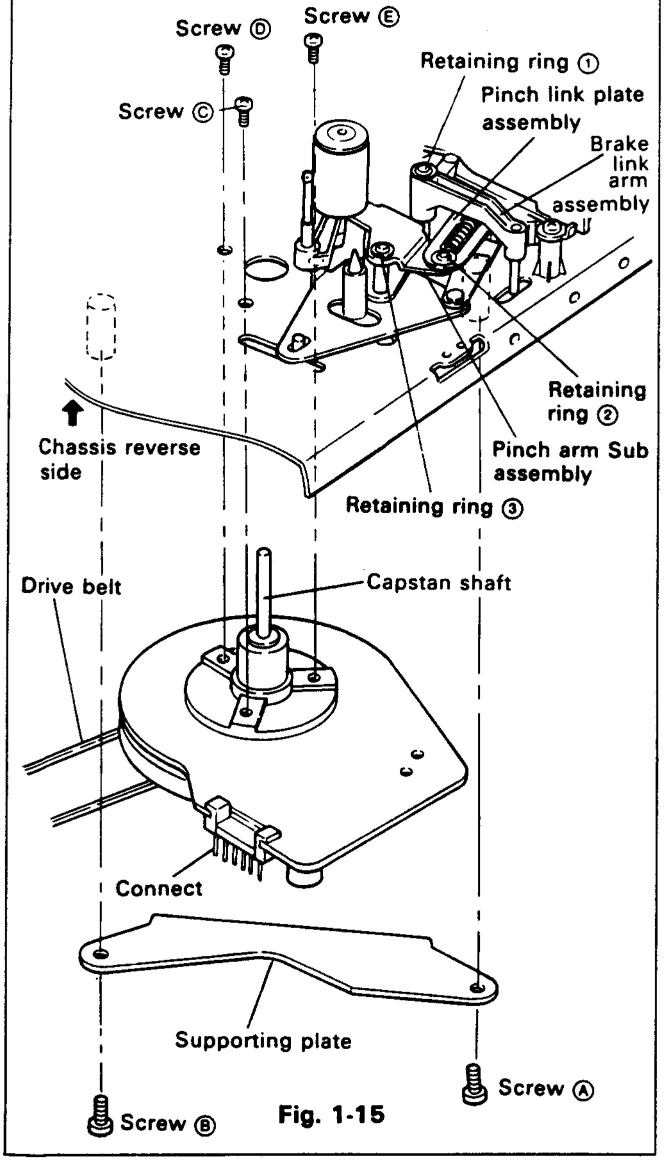

Worm wheel
Ⓓ
Slot (Inner side)
Phase alignment holeⒺ
Connection arm pivot
Mechanism chassis

Fig. 1-14

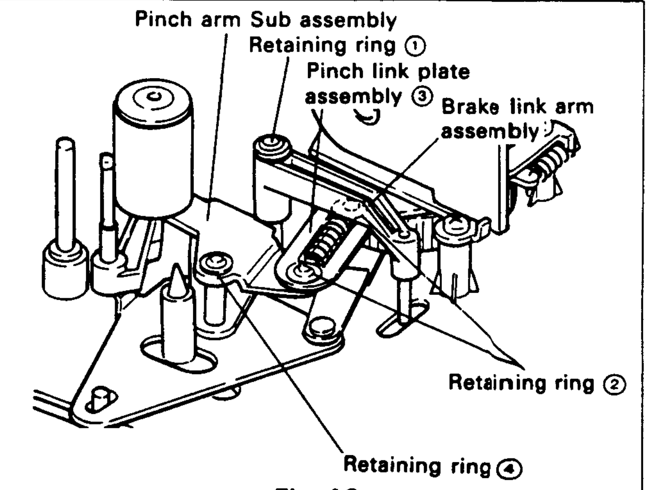
1-15. CAPSTAN MOTOR (Figure 1-15)

(1) Remove retaining ring ①, and then remove the brake link arm assembly.
(2) Remove retaining rings ② and ③, then remove the pinch arm sub assembly upwards.
(3) Working from the reverse side of the chassis, remove screws Ⓐ and Ⓑ, then remove the supporting plate.
(4) Remove the drive belt, then remove the connector from the capstan motor circuit board. Remove screws Ⓒ, Ⓓ and Ⓔ.
(5) Remove the capstan motor.
(6) Replace the capstan motor and mount it into position by following the above procedure in reverse. During this operation, care should be taken not to damage or magnetize the capstan shaft.


Screw Ⓓ
Screw Ⓔ
Retaining ring ①
Screw Ⓒ
Pinch link plate assembly
Brake link arm assembly
Chassis reverse side
Retaining ring ②
Pinch arm Sub assembly
Retaining ring ③
Drive belt
Capstan shaft
Connect
Supporting plate
Screw Ⓐ
Screw Ⓑ
Fig. 1-15

1-16. PINCH ARM SUB ASSEMBLY (Figure 1-16)

(1) Remove retaining ring ①, and then remove the brake link arm.
(2) Remove retaining rings ②, then remove pinch link plate assembly ③.
(3) Remove retaining ring ④ and then remove the pinch arm Sub assembly upwards.
(4) Replace the pinch arm Sub assembly and assemble it into position by following the above procedure in reverse.


Pinch arm Sub assembly
Retaining ring ①
Pinch link plate assembly ③
Brake link arm assembly
Retaining ring ②
Retaining ring ④
Fig. 16

1-17. TENSION REGULATION BAND ASSEMBLY (Figure 1-17)

(1) Remove band holder ① of the tension regulation band assembly from the tension regulation arm assembly. Next, remove screw ② and remove the tension regulation band assembly. (Fig. 1-17)
(2) Exchange the tension regulation band assembly with a new replacement and mount it into position by following the above procedure in reverse.
(3) Adjust the tension regulation arm assembly according to the following procedure.

CAUTION: Excessive pressure on the lever during band holder replacement could bend it out of shape.

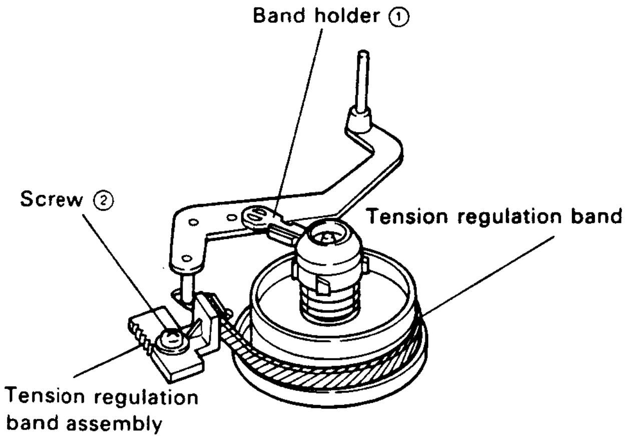

Band holder ①
Screw ②
Tension regulation band
Tension regulation band assembly

Fig. 1-17

1-18. ADJUSTING THE TENSION REGULATION ARM POSITION (Figure 1-18)

(1) With the cassette housing removed, activate the play mode.

(2) Adjust screw ① so that the left end of the tension regulation arm comes in alignment with the chassis side, secure it firmly as shown in Fig. 1-18.

Note:
If back tension is incorrect, check the tension pole position. Use the back tension cassette gauge and confirm a value of between 17 and 32 gcm. If necessary, replace the tension arm spring or tension band and readjust the tension pole position.

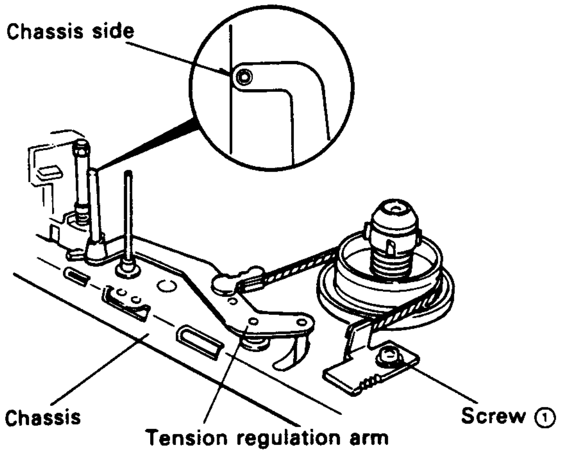

Chassis side
Chassis
Tension regulation arm
Screw ①

Fig. 1-18

1-19. SUPPLY REEL DISK (Figure 1-19)

(1) Release the S soft brake upwards from hook ①.

(2) Remove the retaining ring from the reverse side of the tension regulation arm, then remove screw ③ and tension regulation band.

(3) Remove retaining ring ②, then remove the supply reel disk.

(4) Replace the reel disk and mount it into position by following the above procedure in reverse.

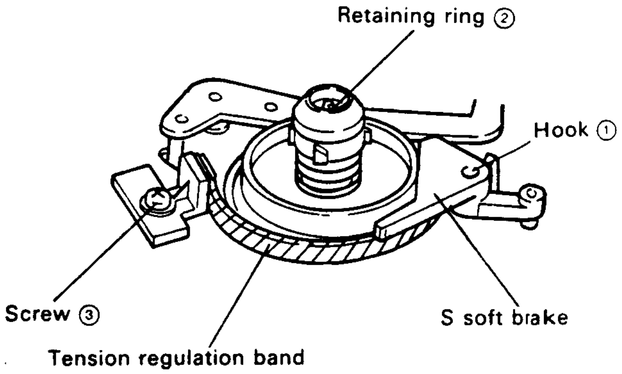

Retaining ring ②
Hook ①
Screw ③
S soft brake
Tension regulation band

Fig. 1-19

1-20. TAKE-UP REEL DISK (Figure 1-20)

(1) Remove spring ④, then remove the R soft brake upwards.

(2) Remove spring ⑤, then remove the lock brake upwards.

(3) Remove retaining ring ⑥, then remove the take-up reel disk.

(4) Replace the reel disk and mount it into position, by following the above procedure in reverse.

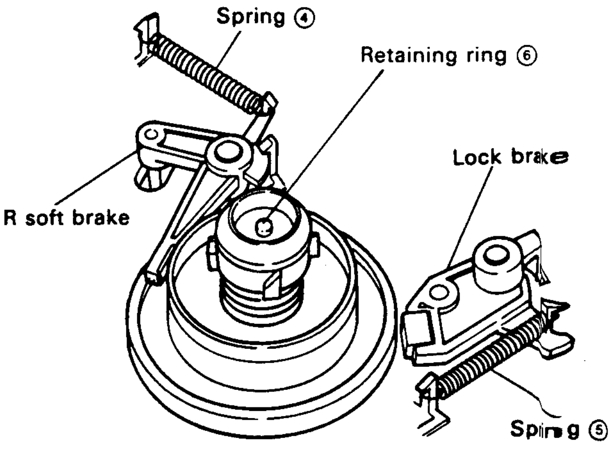

Spring ④
Retaining ring ⑥
Lock brake
R soft brake
Spring ⑤

Fig. 1-20

1-21. ADJUSTMENTS WHEN REPLACING THE SUPPLY AND TAKE-UP REELS (FIGURE 1-21)

Height adjustment of reel disk (height comfirmation of supply and take-up reel disks)
Set the Master Plane B Jig (J-13) on the chassis. (Fig. 1-21-1)

Next, place the Height Gauge BM-2 Jig (J-14) in the positions indicated by the two arrows in Fig. 1-21-1. Slide as shown in Fig. 1-21-2, and verify that the upper surface of the reel disk slides over the A surface of the Height Gauge BM-2 Jig (J-14) and not over the B surface of the Height Gauge BM-2 Jig (J-14).

Note: When checking the height of the supply reel disk, place the Master Plane B Jig (J-13) so that the "S" mark of the Height Gauge BM-2 Jig (J-14) faces upwards.
When checking the height of the take-up reel disk, place the Master Plane B Jig (J-13) so that the "TU, R" mark of the Height Gauge BM-2 Jig (J-14) faces upwards.

If reel disk is outside this range, use polyester washers to make the required adjustments (Fig. 1-21-3).

Part numbers of polyester washers for adjustment

16628731	thickness 0.5 mm
16288001	thickness 0.13 mm

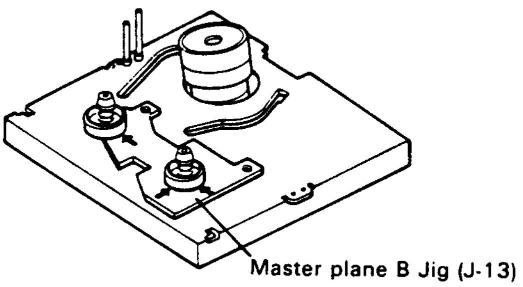

Master plane B Jig (J-13)

Fig. 1-21-1

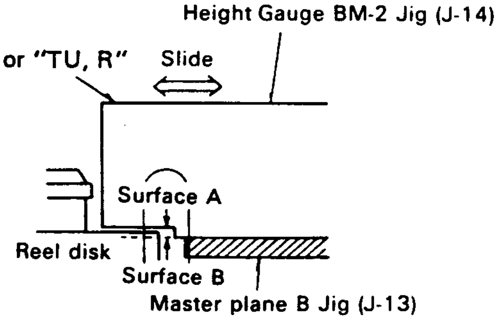

Height Gauge BM-2 Jig (J-14)
"S, R" or "TU, R"
Slide
Surface A
Reel disk
Surface B
Master plane B Jig (J-13)

Fig. 1-21-2

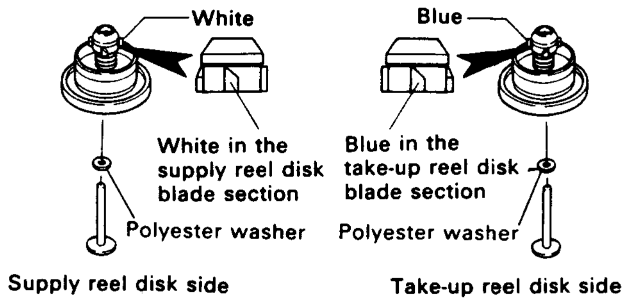

White
Blue
White in the supply reel disk blade section
Blue in the take-up reel disk blade section
Polyester washer
Polyester washer
Supply reel disk side
Take-up reel disk side

Fig. 1-21-3

1-22. TENSION REGULATION ARM ASSEMBLY (Figure 1-22)

(1) Remove screw ①, then remove the tension regulation band assembly from the tension regulation arm assembly.
(2) Remove retaining ring ② from the reverse side of the chassis.
(3) Remove the tension regulation arm assembly upwards.
(4) Replace the tension regulation arm assembly and mount it into position by following the above procedure in reverse.

Notes:

1. When installing the tension regulation arm assembly into place, pin Ⓐ should fall into position © as shown in Fig. 1-22.
2. Adjust the position of the tension regulation arm by referring to Item 1-18.

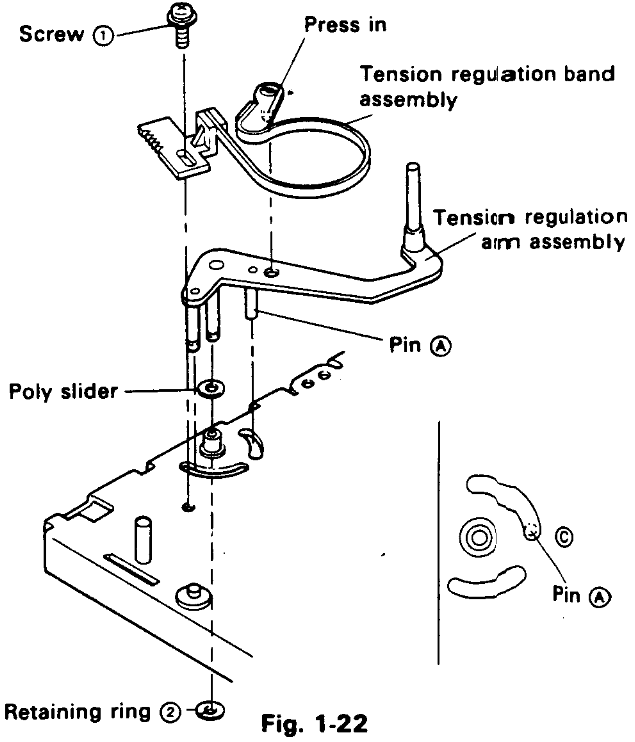

Screw ①
Press in
Tension regulation band assembly
Tension regulation arm assembly
Pin Ⓐ
Poly slider
©
Pin Ⓐ
Retaining ring ②

Fig. 1-22

1-23. MEASURING AND CHECKING THE FWD REEL TORQUE (Figure 1-23)

(1) Remove the cassette housing and short TP101 and TP102 of the S/S/A/V circuit board with a clip. (Refer to Fig. 1-5.)
(2) Activate the FWD mode.
(3) Set the torque gauge on the take-up reel disk base and measure the torque.
(4) FWD torque rating: 90 gcm ±15 gcm.
(5) FF, REW torque rating: more than 400 gcm.
(6) REV torque rating: 170 gcm ±25 gcm.

1-24. MEASURING AND CHECKING THE BRAKING TORQUE (Figures 1-23, 1-24, 1-25)

Be sure to carry out the following measurements after the brake arm (R),(L) has been replaced.

(1) Remove the cassette housing.
(2) Keep the VCR in the FF mode and unplug the AC cord.
(3) Press the lock arm of the mode cam assembly in the direction of the arrow.

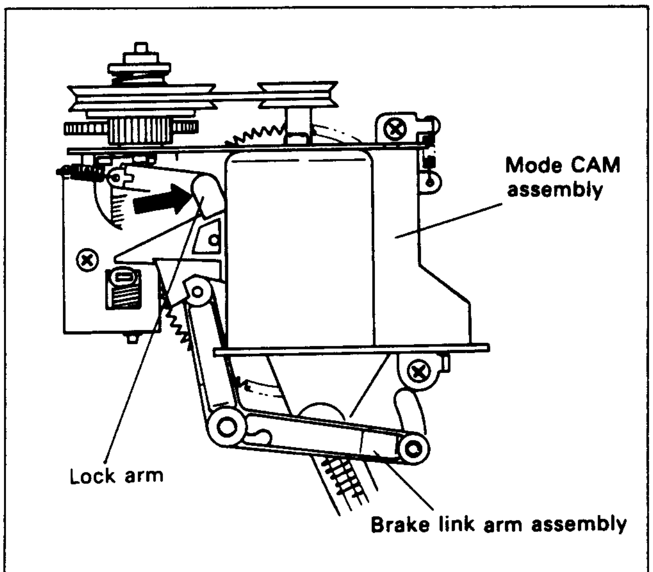


Fig. 1-23

(4) Before measuring the torque of the brake arm (L), lightly push the S soft brake in the direction indicated by the arrow, then release the tension regulation band from the reel disk.
(5) Place a torque meter on the S reel disk. Grasping the torque meter lightly, turn it clockwise, and read out the value when the meter face plate begins to move along together with the meter needle. Check that this value falls between 250 ~ 500 gcm.
(6) Using the same procedure as above, lightly grasp the torque meter, turn the gauge counterclockwise, and read out the value when the meter face plate begins to move along with the meter needle. Check that this value falls between 50 ~ 180 gcm.

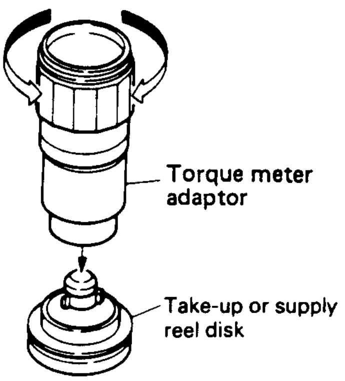


Fig. 1-24

Notes:
1. When measuring the brake arm (R) torque, lightly push the TU soft brake so that it releases from the reel disk, following the same procedure as when measuring the torque of the brake arm (L).
2. If the measured value deviates excessively from the appropriate values, carefully check the springs, etc.

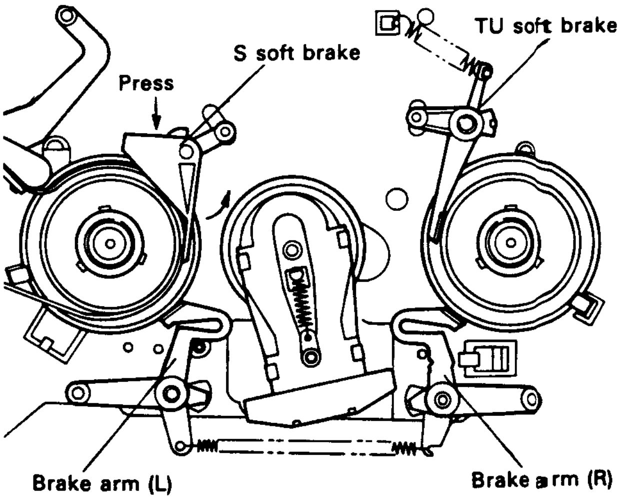


Fig. 1-25

2. CHECKING AND ADJUSTING THE TAPE PATH

Because the tape transport system is precision-adjusted at the factory prior to product shipment, there is usually no need to readjust the system. Note, however, that after extensive use or when any tape transport system parts have been replaced, it becomes necessary to check and adjust the tape path and tape transport system.

2-1. TAPE PATH MECHANISM (Figure 2-1)

The VHS-system tape path is characterized by upper drum rotation with the video head to wind the tape around the drum in an M-shaped form.

To wind the tape accurately around the tilted drum, the tape is guided by a slanted guide posts (thrust poles) mounted to the left and right of the drum. The tape level during operation is determined by the pair of guide rollers.

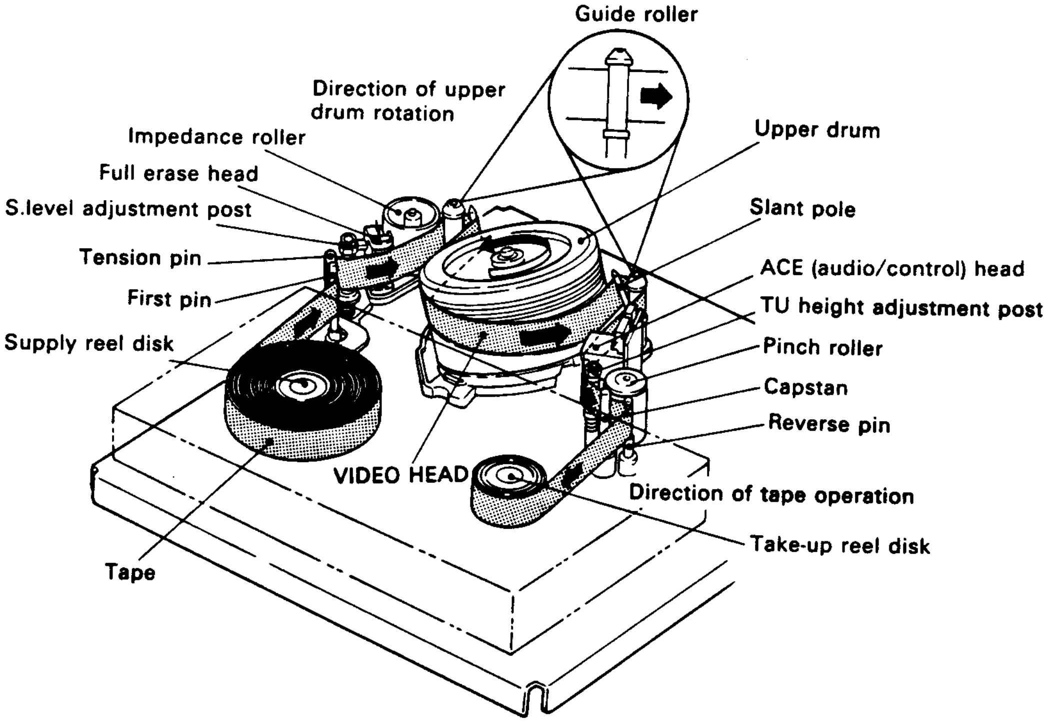

Guide roller
Direction of upper drum rotation
Impedance roller
Full erase head
S.level adjustment post
Tension pin
First pin
Supply reel disk
Tape
VIDEO HEAD
Upper drum
Slant pole
ACE (audio/control) head
TU height adjustment post
Pinch roller
Capstan
Reverse pin
Direction of tape operation
Take-up reel disk

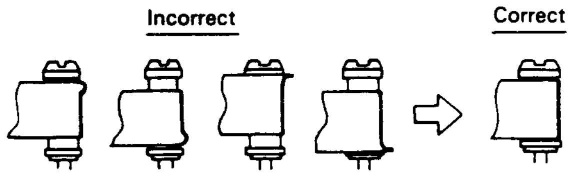
Fig. 2-1

The tape is always wound around the cassette through the first pin, tension pin, and S.level adjustment post via the path indicated by the arrows in Fig. 2-1.
In addition, the impedance roller absorbs minor vibration in the direction of tape operation to eliminate picture jitter and voice wow and flutter.
The reverse pin controls the level of the tape fed from the take-up reel side before it reaches the capstan (pinch roller) when the tape is reversed in the REV mode.

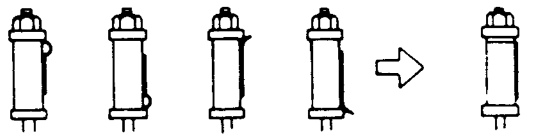
2-2. CHECKING THE TAPE TRANSPORT SYSTEM (Figures 2-2, 2-3)

(1) Use a E-120 cassette tape.
(2) Use a cleaning cloth soaked in cleaning solution (isopropyl alcohol) to clean the tape transport system parts (tape guide, tape contact surface of drum, capstan shaft, pinch roller, surface of ACE and FE heads, etc.).
(3) Use a cassette tape to check the following points.
(4) Operate the PLAY and STOP modes a few times to ensure proper operation.

(5) In the PLAY, CUE, and REV modes, observe whether the tape is being wrinkled or not on the supply guide roller, supply guide pole, take-up guide roller, take-up guide pole and reverse pin. If the tape is being wrinkled, make the necessary adjustments by referring to figure 2-2 and performing the adjustments described in Item 2-3.



(a) Guide roller



(b) Guide pole

Fig. 2-2

(6) In the PLAY, CUE and REV modes, confirm that tape undulation does not occur at sections Ⓐ and Ⓑ shown in Fig. 2-3. To check section Ⓐ, remove the impedance roller from the tape.

(7) Repeat the REV and CUE modes a few times alternately to check that the tape does not move up and lower at the lower area of the ACE head.

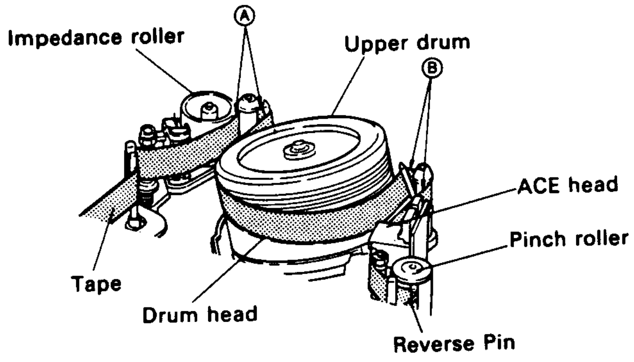


Fig. 2-3

2-3. ADJUSTING THE TAPE TRANSPORT SYSTEM (Figures 2-4, 2-5, 2-6)

Only make these adjustments if a malfunction has been detected during the checking described in Item 2-2.

Note: Be sure to carry out intercompatibility adjustments after the tape transport system has been adjusted, be sure to make the intercompatibility adjustments to ensure compatibility among parts.

2-3-1 Adjusting the guide roller height (vertical pole height adjustment)

(1) As shown in Fig. 2-4, loosen the fixing screws of the supply guide roller and take-up guide roller (until the guide rollers can be turned easily by using the adjustment screwdriver).

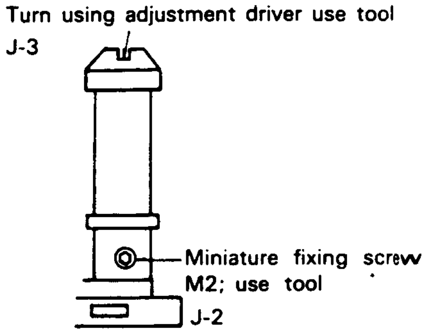

Turn using adjustment driver use tool J-3
Miniature fixing screw M2; use tool J-2

Fig. 2-4

(2) Insert a cassette tape, and activate the PLAY mode.

(3) Rotate the supply guide roller with the adjustment screwdriver (J-3) to tighten tape tension at the upper and lower flanges.

(4) Adjust the take-up guide roller according to the same procedure.

2-3-2 Adjusting the guide pole and reverse pin heights

Note: When adjusting the take-up guide pole height, be sure to remove the cap.

[A] Adjusting the guide pole and reverse pin heights

(1) To adjust the height of supply-side guide pole, set the Height Gauge AM-2 Jig (J-12) on the chassis as shown in Fig. 2-5 and rotate the nylon nut to adjust to the height of the lower surface of the upper flange.

(2) To adjust the height of take-up side guide pole, place the Master Plane B Jig (J-13) on the chassis, and place the Height Gauge AM-2 Jig (J-12) on J-13 with the side marked "TU, R" facing up as shown in Fig. 2-5.
Then rotate the nylon nut to adjust to the height of the lower surface of the upper flange.

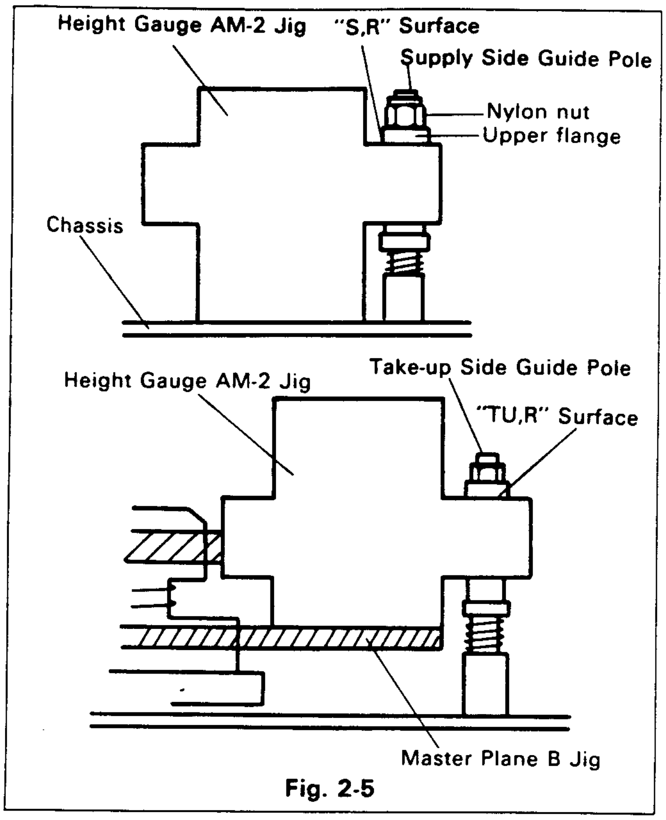

Height Gauge AM-2 Jig
"S,R" Surface
Supply Side Guide Pole
Nylon nut
Upper flange
Chassis
Height Gauge AM-2 Jig
Take-up Side Guide Pole
"TU,R" Surface
Master Plane B Jig

Fig. 2-5

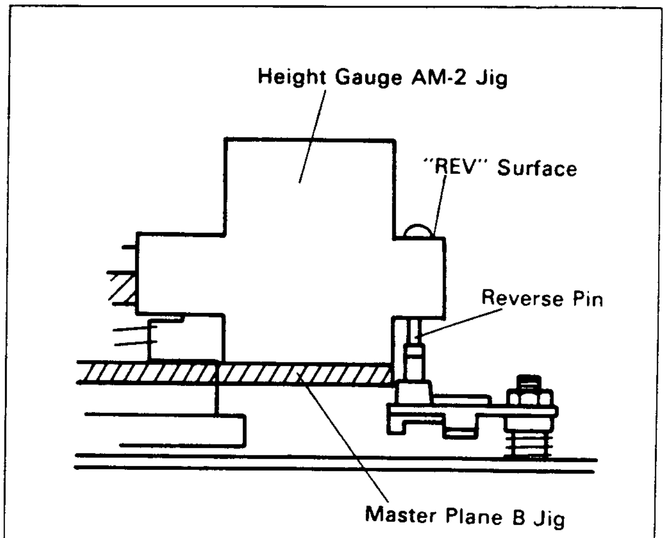

Height Gauge AM-2 Jig
"REV" Surface
Reverse Pin
Master Plane B Jig

Fig. 2-6

(3) To adjust the height of the reverse pin, place the Master Plane B-2 Jig (J-13) on the chassis, and place the Height Gauge AM-2 Jig (J-12) on J-13 with the side marked "REV" facing up as shown in Fig. 2-6. Then rotate the nylon nut to adjust to the height of the lower surface of the upper flange.

[B] Precisely adjusting the supply and take-up guide pole heights

(1) Insert a E-120 cassette tape, and activate the PLAY mode.

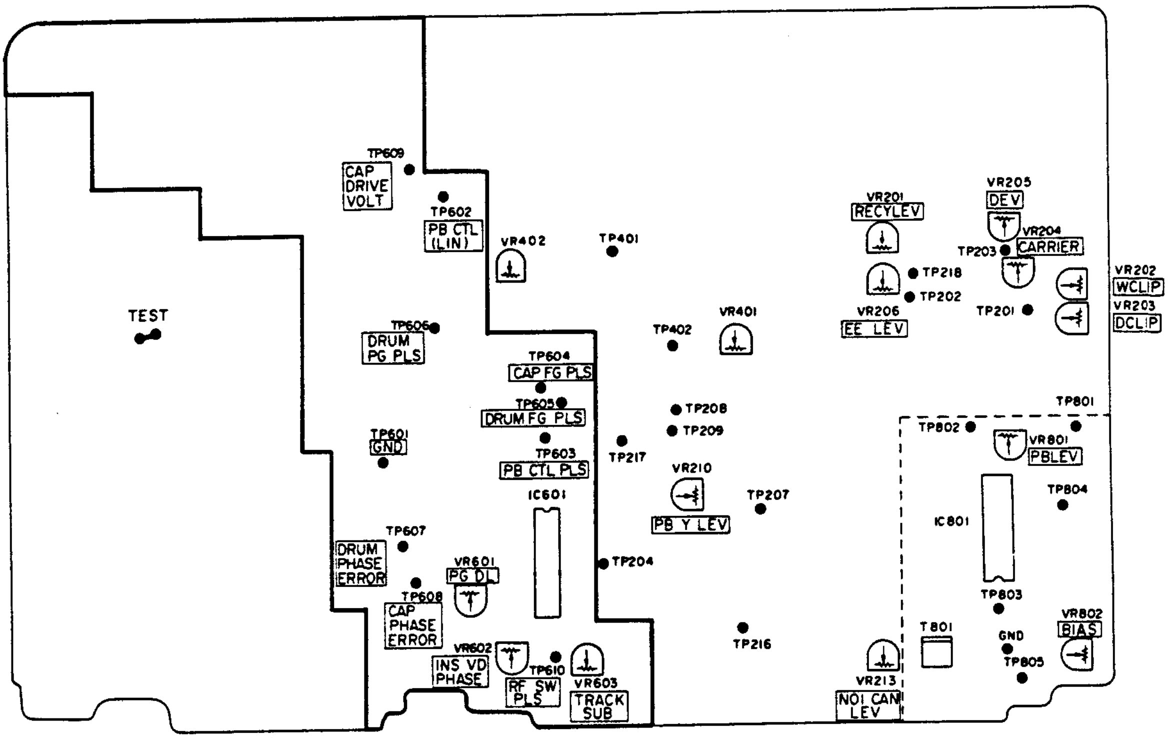
(2) As shown in Fig. 2-2, use the box driver (J-5) to precisely adjust the guide pole height and eliminate tape wrinkling on the pole.

(3) If tape wrinkling cannot be eliminated by the above adjustment, check the supply reel disk height, tension pin, and other parts.

3. INTERCOMPATIBILITY ADJUSTMENTS (N9053G/N9055G)

Because these adjustments have a significant effect on the picture quality in the respective modes, as well as affecting the degree of tape intercompatibility, be sure to perform the following procedures very carefully and thoroughly.

(N9053G)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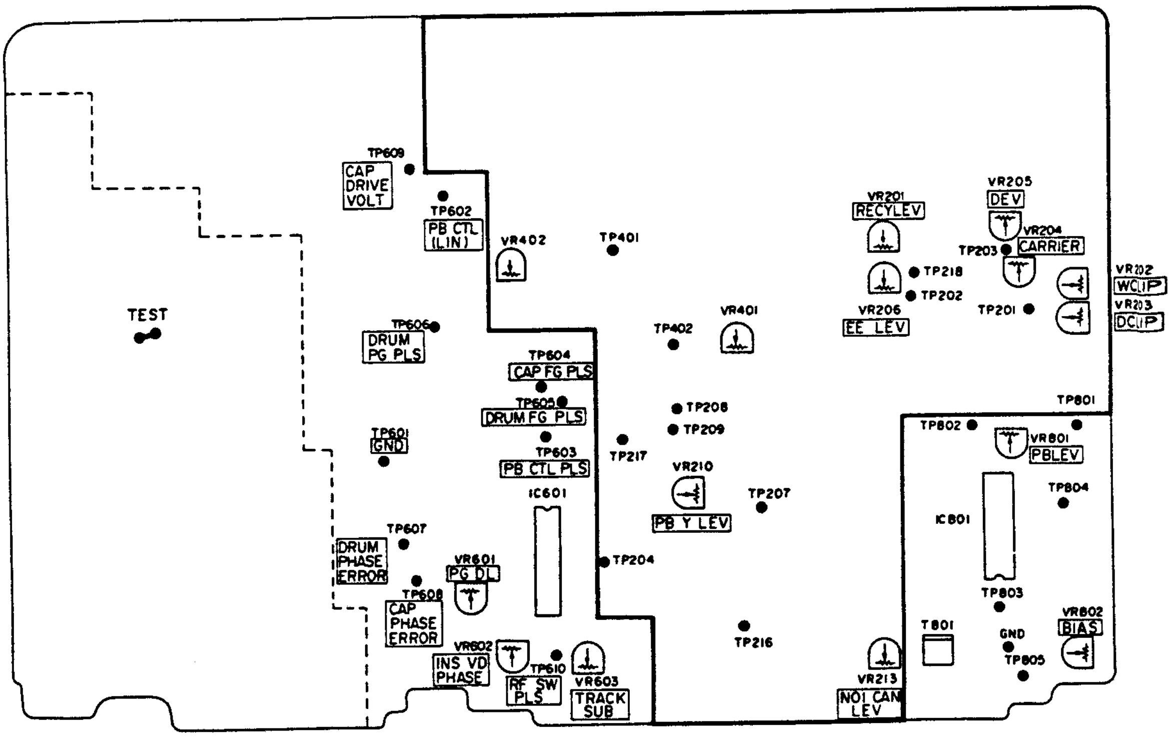
TP602
PB CTL (LIN)
VR402
TP401
VR201
RECYLEV
VR205
DEV
VR204
CARRIER
TP203
TP218
TP202
VR202
WCLIP
VR203
DCLIP
TP201
VR206
EE LEV
VR401
TP402
TP606
DRUM PG PLS
TP604
CAP FG PLS
TP605
DRUM FG PLS
TP208
TP209
TP601
GND
TP603
PB CTL PLS
TP217
VR210
PB Y LEV
TP207
IC601
TP802
VR801
PBLEV
TP801
TP804
IC801
TP607
DRUM PHASE ERROR
VR601
PG DL
TP204
TP608
CAP PHASE ERROR
VR602
INS VD PHASE
TP610
RF SW PLS
VR603
TRACK SUB
TP216
VR213
NOI CAN LEV
T801
TP803
GND
TP805
VR802
BIAS

SERVO • This circuit board is viewed from component side.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VR401
TP402
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GND
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TP207
IC601
TP802
VR801
PBLEV
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TP804
IC801
TP607
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PG DL
TP204
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CAP PHASE ERROR
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INS VD PHASE
TP610
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VR603
TRACK SUB
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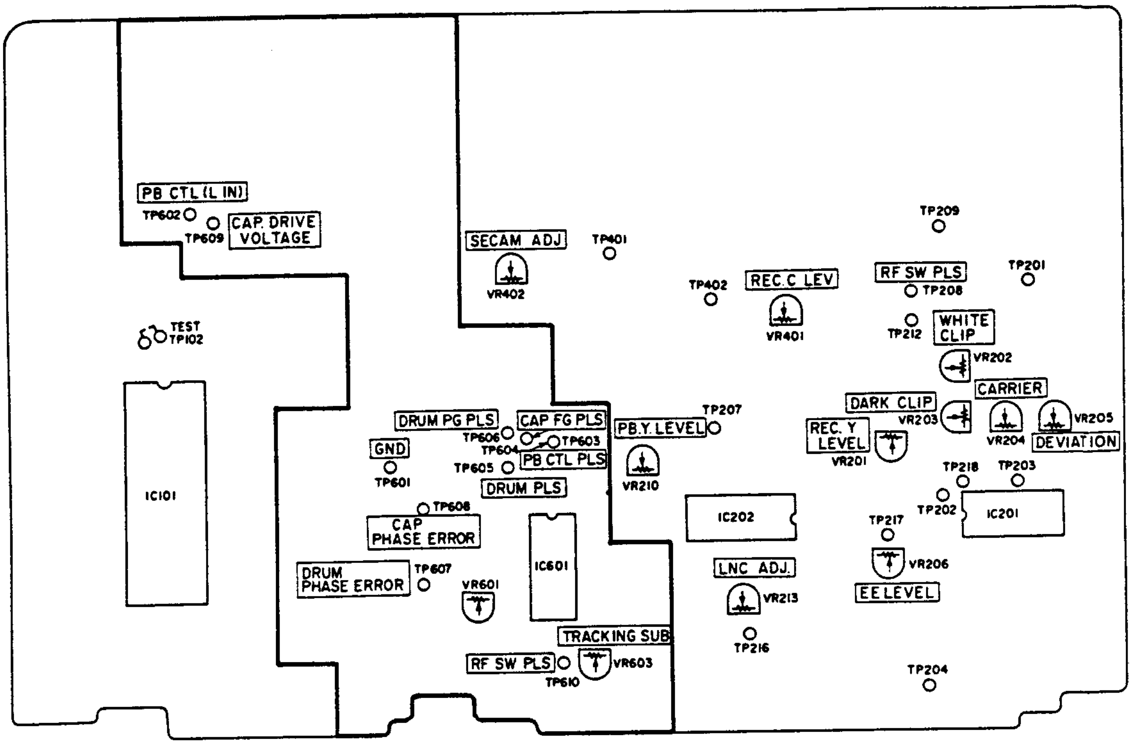
GND
TP805
VR802
BIAS

VIDEO

• This circuit board is viewed from component side.

(N9055G)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SECAM ADJ
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TP402
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VR401
TP209
RF SW PLS
TP208
TP201
TP212
WHITE CLIP
VR202
DRUM PG PLS
CAP FG PLS
TP606
TP603
TP604
PB CTL PLS
GND
TP601
TP605
DRUM PLS
PB.Y. LEVEL
TP207
VR210
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CARRIER
REC. Y LEVEL
VR203
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DEVIATION
VR201
TP218
TP203
TP608
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IC601
IC202
TP217
TP202
IC201
DRUM PHASE ERROR
TP607
VR601
LNC ADJ.
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VR603
TP216
TP204

SERVO

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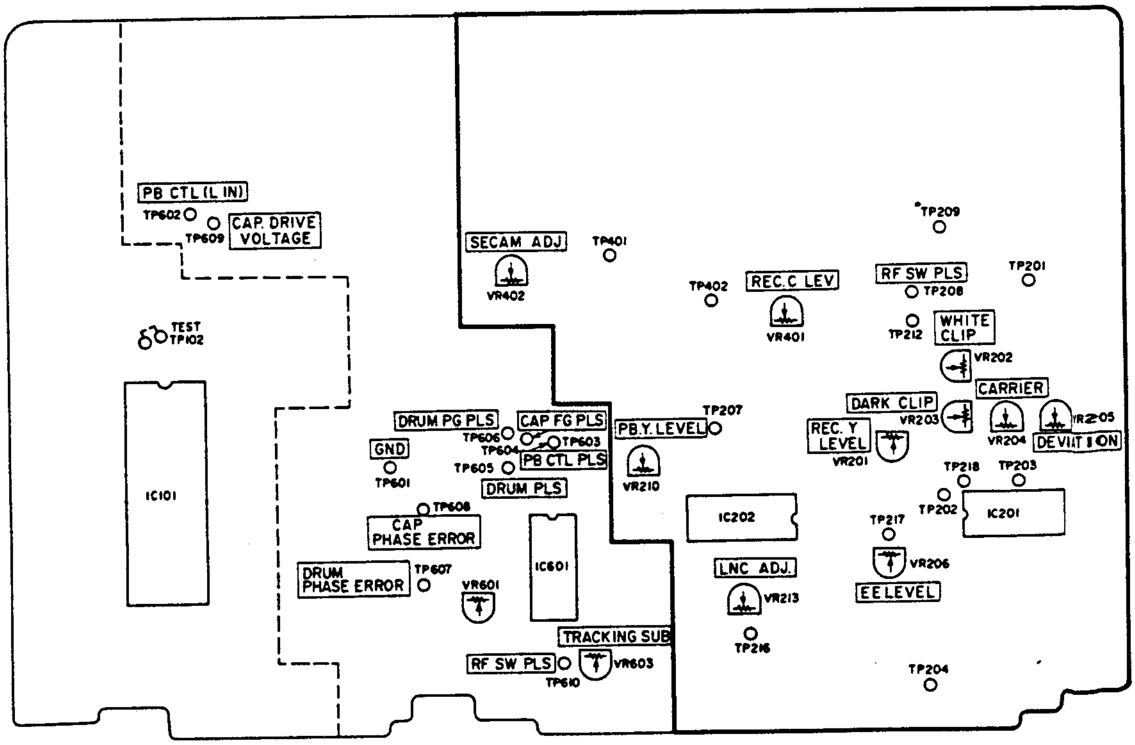
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VR401
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RF SW PLS
TP208
TP201
TP212
WHITE CLIP
VR202
DRUM PG PLS
CAP FG PLS
TP606
TP603
TP604
PB CTL PLS
GND
TP601
TP605
DRUM PLS
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TP207
VR210
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CARRIER
REC. Y LEVEL
VR203
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VR205
DEVIATION
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TP203
TP608
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IC202
TP217
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IC201
DRUM PHASE ERROR
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LNC ADJ.
VR213
VR206
EE LEVEL
TRACKING SUB
RF SW PLS
TP610
VR603
TP216
TP204

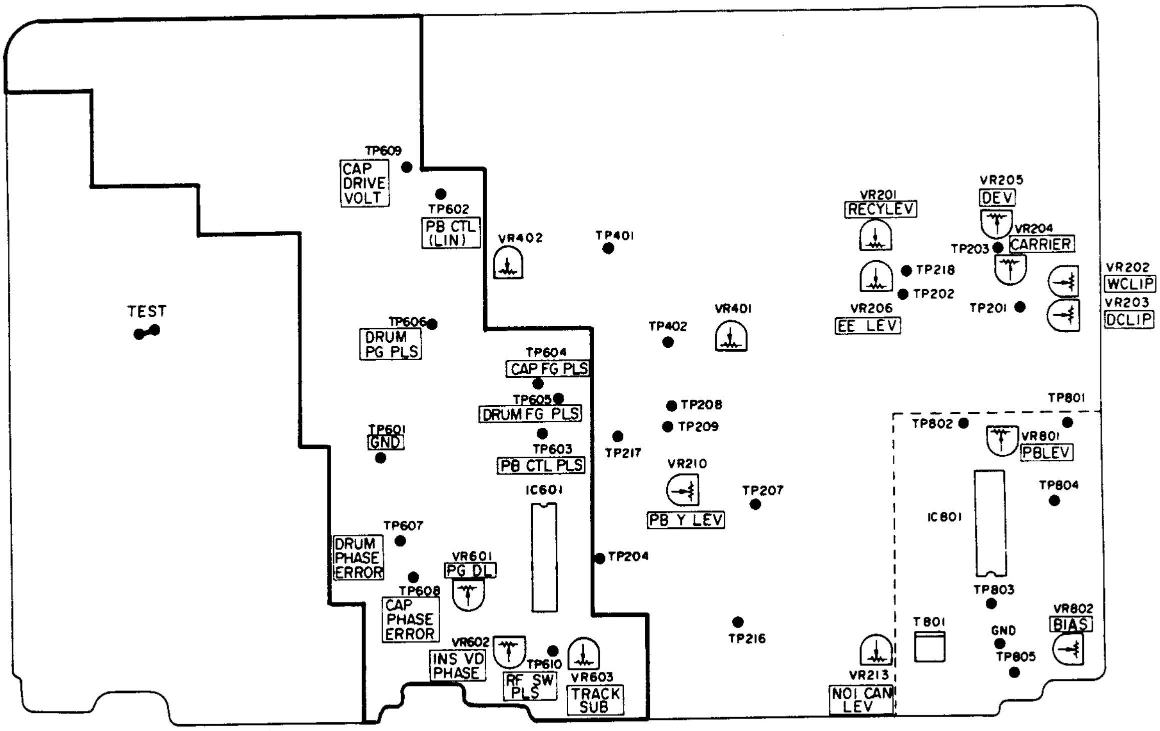
• This circuit board is viewed from component side.

VIDEO

3. INTERCOMPATIBILITY ADJUSTMENTS (N9053G/N9055G)

Because these adjustments have a significant effect on the picture quality in the respective modes, as well as affecting the degree of tape intercompatibility, be sure to perform the following procedures very carefully and thoroughly.

(N9053G)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VR202
WCLIP
VR203
DCLIP
TP201
VR206
EE LEV
TEST
TP606
DRUM PG PLS
VR401
TP402
TP604
CAP FG PLS
TP605
DRUM FG PLS
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PB Y LEV
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TP607
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PG DL
TP204
TP608
CAP PHASE ERROR
TP803
VR802
BIAS
T801
GND
TP216
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INS VD PHASE
TP610
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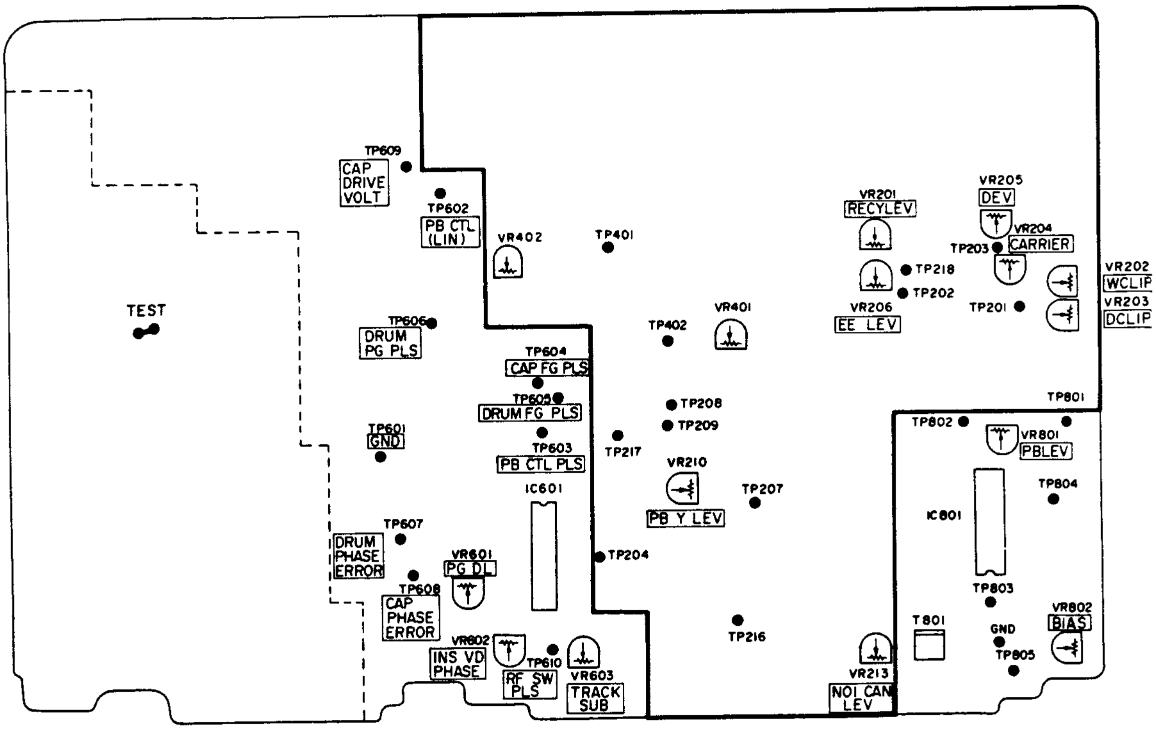
VR603
TRACK SUB
VR213
NOI CAN LEV
TP805

SERVO

• This circuit board is viewed from component side.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WCLIP
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TP402
TP604
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DRUM FG PLS
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TP207
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TP804
IC801
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DRUM PHASE ERROR
VR601
PG DL
TP204
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VR802
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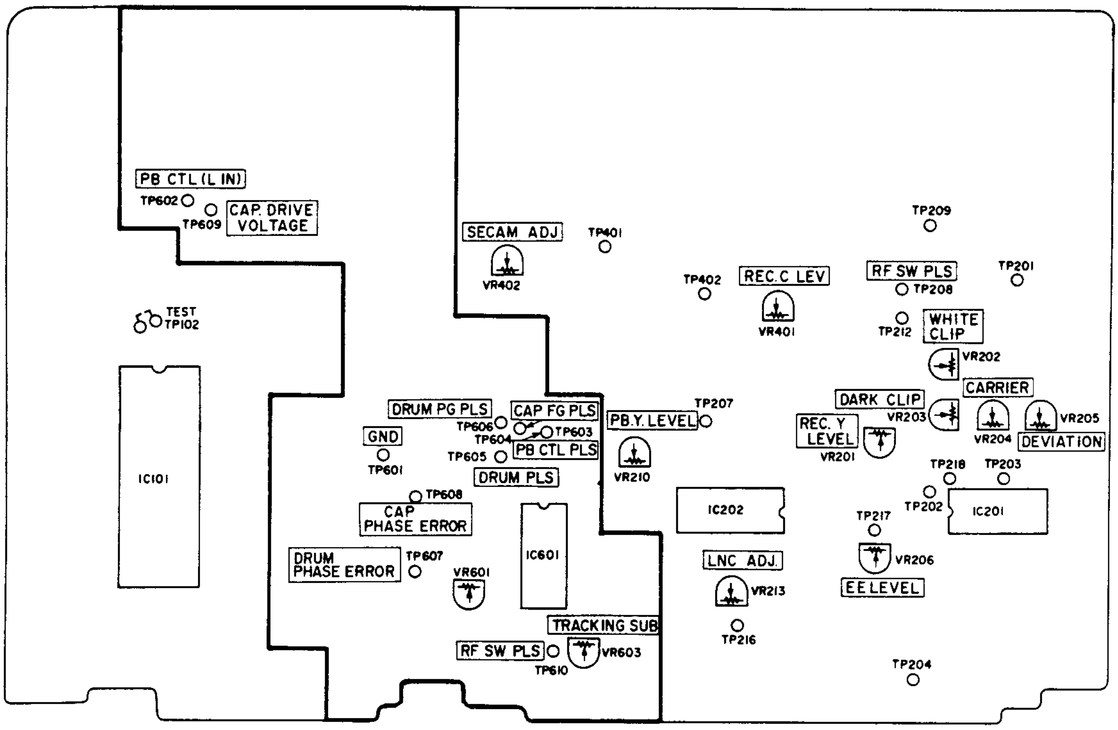
VR603
TRACK SUB
VR213
NOI CAN LEV
TP805

VIDEO

• This circuit board is viewed from component side.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TP208
TP201
TP212
WHITE CLIP
VR202
TEST TP102
IC101
DRUM PG PLS
CAP FG PLS
GND
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TP604
TP603
TP605
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DRUM PLS
PB.Y. LEVEL
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REC. Y LEVEL
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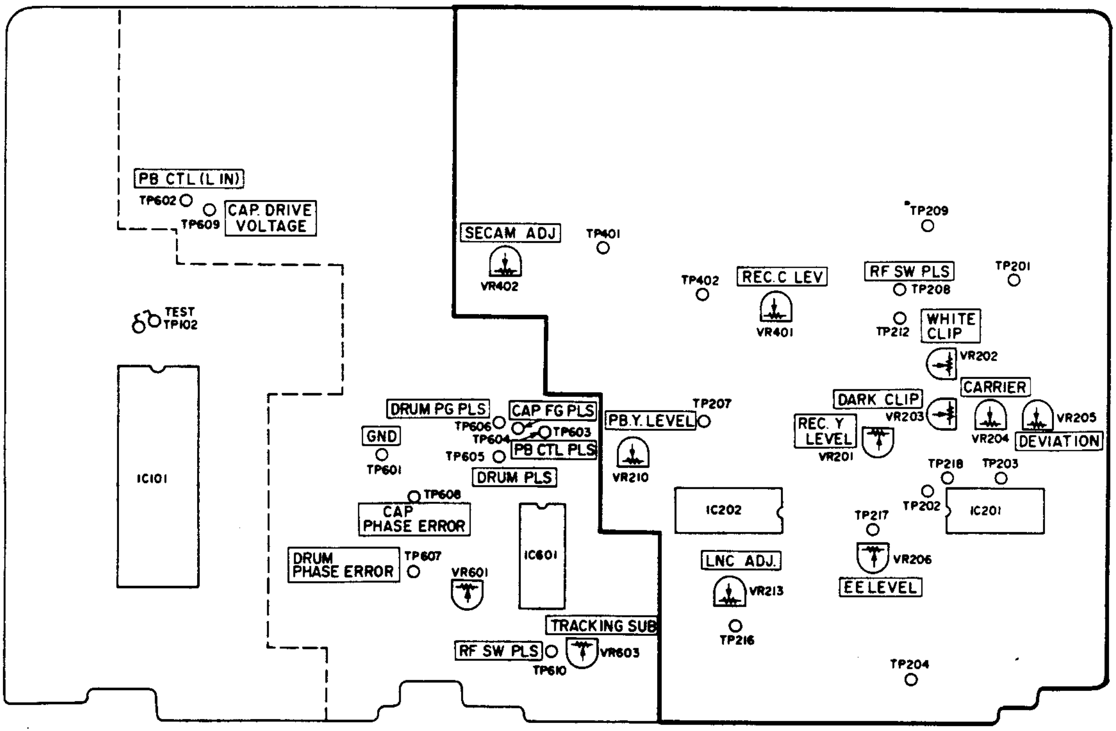
TP204

SERVO

* This circuit board is viewed from component side.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PB.Y. LEVEL
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DRUM PHASE ERROR
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VR601
LNC ADJ.
VR213
VR206
EE LEVEL
TRACKING SUB
RF SW PLS
TP610
VR603
TP216
TP204

* This circuit board is viewed from component side.

VIDEO

3-1. CHECKING THE FM WAVEFORMS

3-1-1 Check 1: Checking the playback switching point

(1) Play the alignment tape (MH-2).

(2) Connect channel 1 of the oscilloscope to TP610 of the S/S/A/V circuit board.
Connect channel 2 of the oscilloscope to TP901 of the jack terminal circuit board.

(3) Confirm that the interval from the RF switching pulse to the Vsync leading edge is at 6.5H ±0.5H.

(4) If not at 6.5H ±0.5H, adjust VR601 on the S/S/A/V circuit board to set the interval at 6.5H ±0.5H.

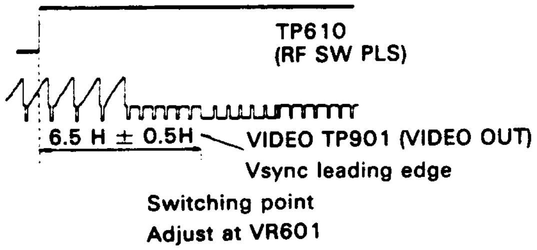


Fig. 3-1

3-1-2 Check 2: Checking the FM waveform

(1) Connect channel 1 of the oscilloscope to TP402 of the S/S/A/V circuit board. Also connect TP610 of the S/S/A/V circuit board or TP901 of the jack terminal circuit board.

(2) Play back the MH-2 alignment tape.

(3) Turn the tracking knob to set the FM waveform output for the maximum level.

(4) Read the FM waveform level (a) as shown in Fig. 3-2. If the waveform is a sawtooth wave, read the level at a wave section where the sawtooth waves are relatively uniform.

(5) Read the FM waveform level (b) as shown in Fig. 3-2, and check the following:

$$\frac{b}{a} \geqq 0.8$$

(6) Read the FM waveform levels (c) (drum entrance) and (d) (drum exit), and check the following:

$$\frac{c}{a} \geqq 0.7 \qquad \frac{d}{a} \geqq 0.7$$

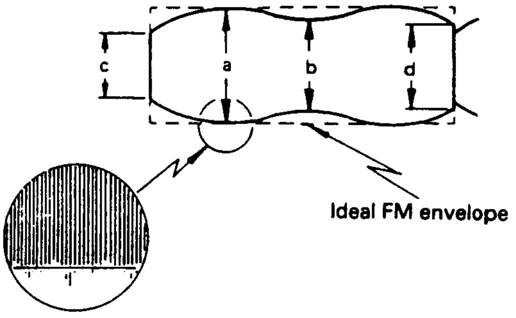


Fig. 3-2

Notes: 1. Read the minimum levels of (b), (c), and (d).
2. If the level values are within the above ranges, proceed to the following "Check 3-2".
3. If any malfunction is detected, follow the coarse FM waveform adjustment procedure described in Item 3-2.

3-1-3 Check 3

1) As previously mentioned in Check 2 (connect the oscilloscope and play back the tape), turn the tracking knob while observing the FM waveforms. Confirm that the waveforms change linearly as shown in Fig. 3-3. When this linear change is confirmed, proceed to the ACE head height and azimuth adjustments described in Item 3-4.

(2) When various waveforms are observed as shown in Fig. 3-4, it is necessary to make the precise adjustments described in Items 3-3.

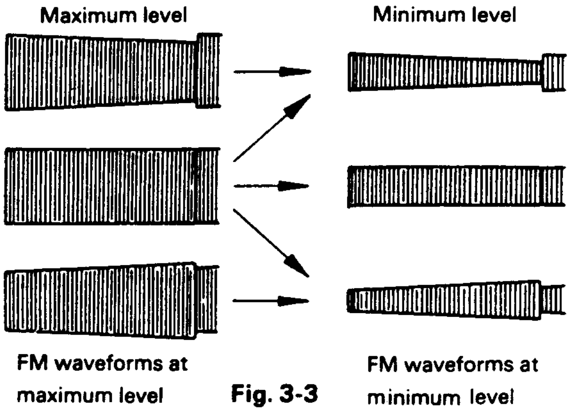

Maximum level
Minimum level
FM waveforms at maximum level
FM waveforms at minimum level

Fig. 3-3

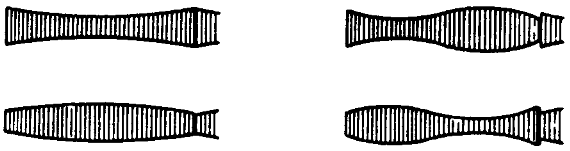


Fig. 3-4

3-2. COARSE ADJUSTMENT OF FM WAVEFORMS (Preliminary adjustments)

(1) Use the hexagonal screwdriver (J-2) to loosen the fixing screws of the supply guide and take-up guide rollers so that the guide rollers can be adjusted.

(2) Connect channel 1 of the oscilloscope to TP402 of the S/S/A/V circuit board. Also connect TP610 of the S/S/A/V circuit board or TP901 of the jack terminal circuit board to the oscilloscope as an external synchronization terminal.

(3) Play back the MH-2 alignment tape.

3-2-1 Drum entrance side

(1) While observing the waveforms on the oscilloscope, turn the tracking knob to set the FM waveform for the maximum level.

(2) If the FM waveforms look like A in Fig. 3-5, adjust the supply guide roller until the waveforms look like B in Fig. 3.5.

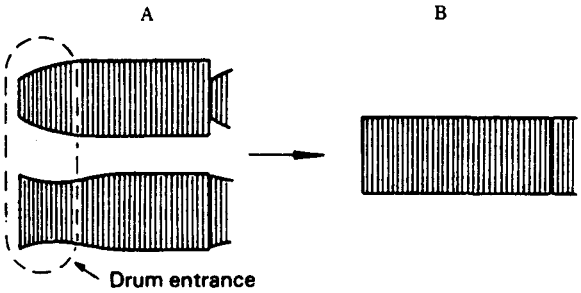

A
B
Drum entrance

Fig. 3-5

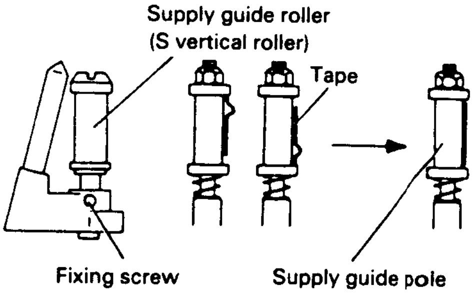

Supply guide roller
(S vertical roller)
Tape
Fixing screw
Supply guide pole

Fig. 3-6

Notes: 1. Gently tighten the fixing screws so that the guide roller height adjustment screw can rotate freely. (Adjust within the proper range by using tool J-3).

2. Make small guide roller adjustments to avoid damaging the MH-2 alignment tape.

3. While observing the waveforms, check for any tape wrinkling at the guide poles and leading edge of the drum.

3-2-2 Drum exit

(1) Adjust the FM waveforms by using the same procedure as used for drum entrance adjustment (by turning the take-up guide roller). If the waveforms look like C in Fig. 3-7, adjust the take-up guide roller until the waveforms look like D.

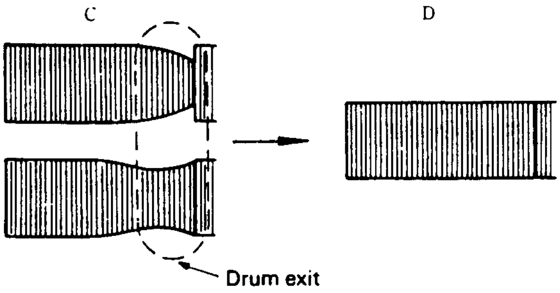


Fig. 3-7

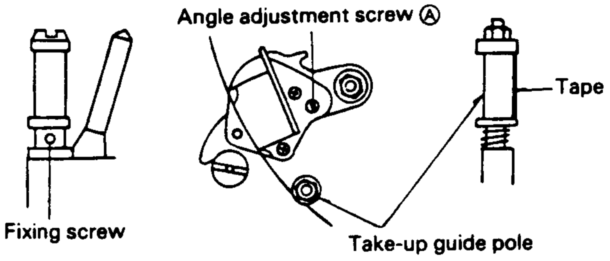


Fig. 3-8

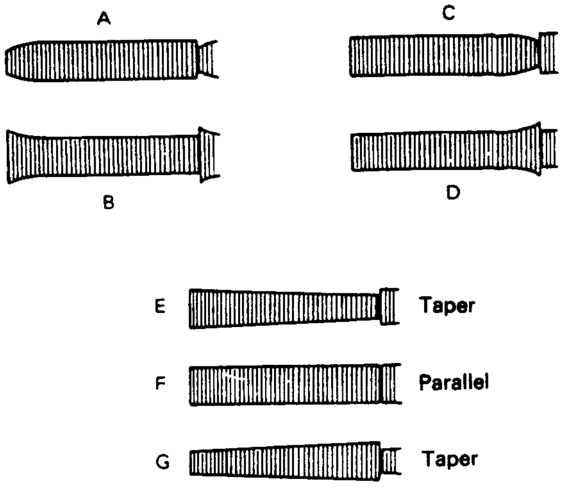


Fig. 3-9

Note:
After completing these adjustments, confirm that the tape transport operation is functioning properly, and carefully tighten the fixing screws.

3-3. FINE ADJUSTMENT FOR INTER-COMPATIBILITY

(1) Connect the oscilloscope to TP402 of the S/S/A/V circuit board. Also connect TP610 of the S/S/A/V circuit board or TP901 of the jack terminal circuit board to the external synchronization terminal of the oscilloscope. Playback the MH-2 alignment tape. While observing the waveforms on the oscilloscope, turn the tracking knob to set the FM waveforms for minimum levels.

(2) If the waveforms look like A or B in Fig. 3-9, minimize the FM waveform output by carefully adjusting the supply guide roller until the waveforms look like E, F, or G in Fig. 3-9.

(3) If the waveforms look like C or D in Fig. 3-9, minimize the FM waveform output by carefully adjusting the take-up guide roller until the waveforms look like E, F, or G in Fig. 3-9.

(4) While turning the tracking knob to adjust the maximum and minimum levels of FM waveform output, adjust the supply and take-up guide rollers until the waveforms look like E, F, or G in Fig. 3-9.

3-4. ACE HEAD ADJUSTMENT

If the height of the audio/control head is incorrect, a poor SN ratio will result when reproducing prerecorded tapes. Refer to Fig. 3-10.

(1) Connect channel 1 of the oscilloscope to the AUDIO OUT jack on the rear panel.
(2) Play back the MH-2 alignment tape and reproduce the 6 KHz audio signal.
(3) While observing the audio output signal on the oscilloscope, adjust the height adjustment nut Ⓐ shown in Fig. 3-10 to the maximum output level.
(4) Next, adjust the azimuth adjustment screw Ⓑ to the maximum output level.

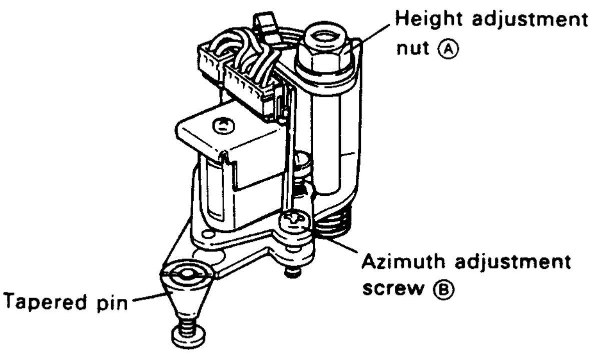


Fig. 3-10

3-5. ADJUSTING THE CTL POSITION

[A] Adjusting subtracking

(1) Connect channel 1 of the oscilloscope to TP610 of the S/S/A/V circuit board. Also, connect channel 2 of the oscilloscope to TP603 of the S/S/A/V circuit board.
(2) Play back the MH-2 alignment tape.
(3) Adjust VR603 so that the leading edge of CTL PLS is synchronized with the leading edge of the RF switching pulse as shown in Fig. 3-11.

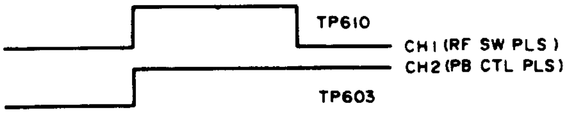


Fig. 3-11

Note: The tracking knob must be set in the center position.

[B] Adjusting the ACE head position

(1) Connect channel 1 of the oscilloscope to TP402 of the S/S/A/V circuit board, and channel 2 of the oscilloscope to TP610 of the S/S/A/V circuit board or TP901 of the jack terminal circuit board.
(2) Play back the MH-2 alignment tape, set the tracking knob at the center position, and turn the tapered pin in Fig. 3-10 so that the maximum FM waveform output level is set. Play back the MH-2 alignment tape, and confirm that the maximum FM waveform output level is obtained with the tracking knob set at the center position.

3-6. FINAL TESTING AND CHECKING

(1) Connect channel 1 of the oscilloscope to TP610 of the S/S/A/V circuit board. Connect channel 2 of the oscilloscope to TP901 of the jack terminal circuit board.
(2) Confirm that the REC timing is 6.5 H ± 1 H.
(3) Record this signal on a blank tape (using a monochrome or stair-step pattern).
(4) Check the FM waveforms thus recorded on the tape. Connect channel 1 of the oscilloscope to TP402 of the S/S/A/V circuit board, and connect channel 2 of the oscilloscope to TP610 of the S/S/A/V circuit board. Then, play the tape back.
(5) Confirm that the degree of eveness (a/b) is greater than 0.8, or greater than 0.85 if minor fluctuations occur.

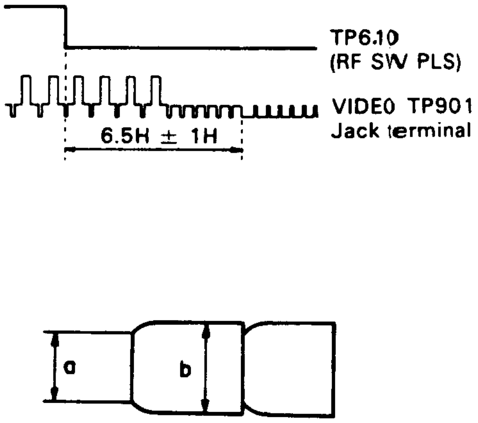


Fig. 3-12

After completing the above test and adjustment procedures, confirm that the tape transport operation is functioning properly, place locking paint on the tapered pin screw.

4. ELECTRICAL ADJUSTMENTS (N9053G/N9055G)

4-1. PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts. Note that these adjustments should only be made after completing all repairs and replacements. Also, do not attempt these adjustments unless the proper equipment is available.

4-1-1 Required test equipment and jig

① Color TV monitor
② Oscilloscope: Wideband
③ Signal generator: Color bar, Stair-step
④ Frequency counter
⑤ Audio generator
⑥ Alignment tape (MH-2), and other general electrical tools.
⑦ Video tape: E-60, E-120
⑧ Digital multimeter or tester

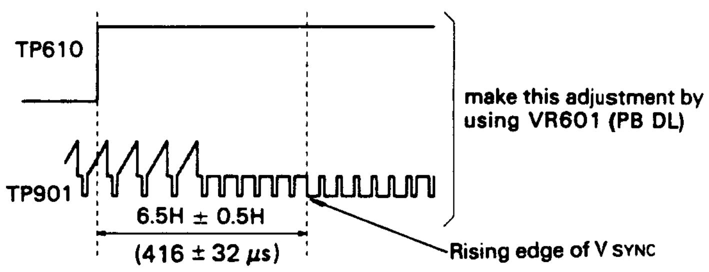
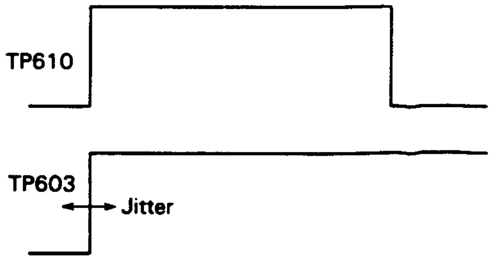
4-1-2 Alignment tape contents

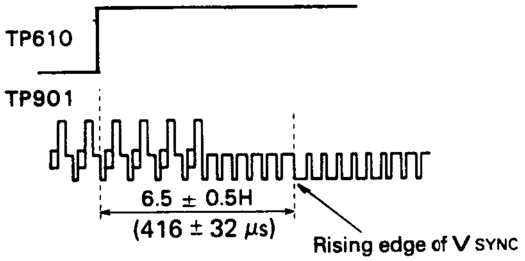
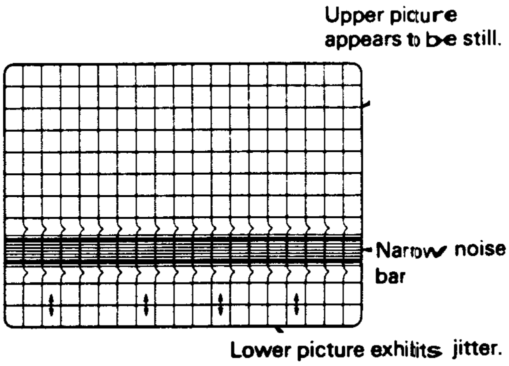
1. MH-2

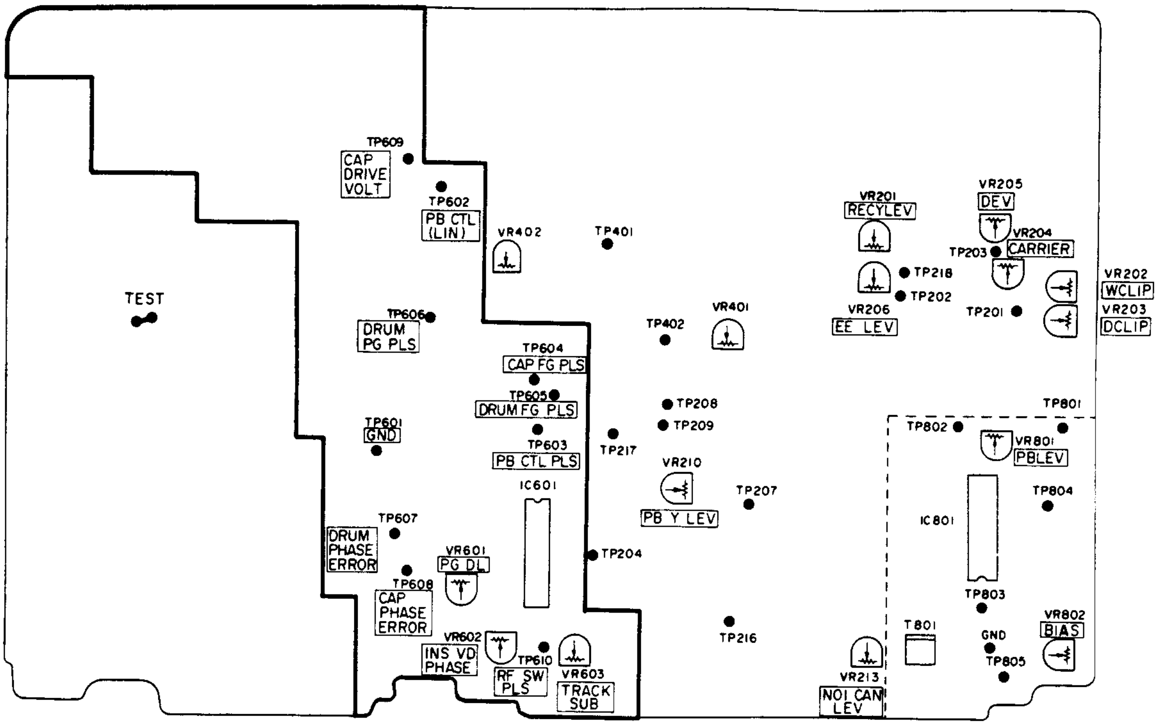
No.	Playback Time	Video Signal	Audio Signal	Applications
1	10 minutes	Stair-step	6 kHz	● Interchangeability checks and adjustments ● Servo circuit checks and adjustments ● Audio head azimuth adjustment
2	5 minutes	(none)	3 kHz	● Tape speed checks ● Wow and flutter checks
3	10 minutes	Color bar	1 kHz 0 dB	● Video signal playback circuit checks and adjustments ● Audio signal playback circuit checks and adjustments
4	3 minutes	RF sweep	(none)	● Video head resonance adjustments ● Marker: 2.0, 4.0, 5.0 MHz (not used)

Table 4-1 MH-2 contents

4-2. SERVO CIRCUIT (S/S/A/V board) (N9053G)

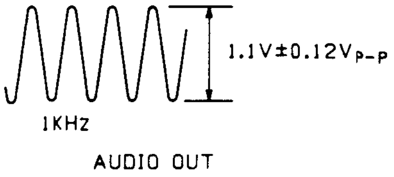
No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
1	Video Tape Switching Point	TP610 (RF SW PLS) TP901 (VIDEO OUT) (Jack terminal circuit board)	VR601 (PB DL)	MH-2 P.B.	1. Connect an oscilloscope to TP610 and TP901. 2. Play back MH-2 and confirm that the servo is locked. possible picture is obtained on the monitor screen. 3. Adjust VR601 so that the phase relationship between the RF SW pulse and video signal shown below is displayed on the oscilloscope screen.  TP610 TP901 6.5H ± 0.5H (416 ± 32 μs) make this adjustment by using VR601 (PB DL) Rising edge of V SYNC
2	Tracking Sub VR	TP610 (RF SW PLS) TP603 (PB CTL PLS)	VR603 (TRACKING SUB)	MH-2 P.B.	1. Connect an oscilloscope to TP610 and TP603. 2. Set the tracking VR to its center detent position. 3. Play back the MH-2 alignment tape, and adjust VR603 so that the phase relationship between the waveforms shown in the figure below is established. (When the oscilloscope is externally triggered by a signal issued from TP610, the waveform of TP603 will exhibit lateral jitter. Adjust VR603 so that the rising edge of TP603 is set to the center of jitter.)  Tracking center adjustment

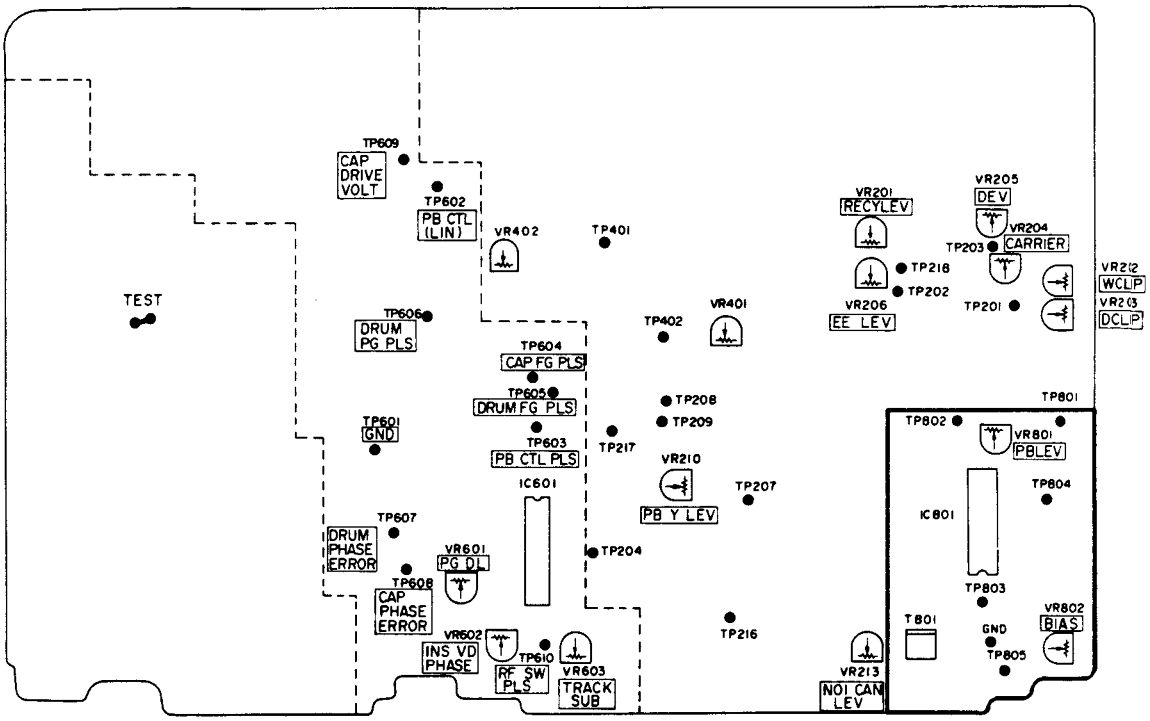
No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
3	Drum Lock Phase (REC TIMING)	TP610 (RF SW PLS) TP901 (VIDEO OUT) (Jack terminal circuit board)	Check	● PAL Color bar ● REC	1. Connect an oscilloscope to TP610 and TP901. 2. Operating in the REC mode, and confirm that the phase relationship between the waveforms of TP610 and TP901 shown in the figure below is established. **Note:** If the tape is seriously damaged, the lock phase will exhibit significant jitter when checking is perfomed. If the tape damage is not serious and the center of the lock phase jitter satisfies the relationship shown below, the tape will be accepted.  TP610 TP901 6.5 ± 0.5H (416 ± 32 μs) Rising edge of V SYNC Drum lock phase
4	Insert VD	TV monitor	VR602 (INS VD PHASE)	● TV signal or cross-hatch pattern ● REC, PB	1. Record the signal for more than 1 minute. 2. Play back the recorded section and advance the frame in the still mode, and adjust it so that two noise bars are not simultaneously displayed on the screen. 3. When a narrow noise bar (there may be two noise bars; narrow and wide) is displayed on the screen, adjust VR602 to minimize the vertical jitter of the upper picture.  Upper picture appears to be still. Narrow noise bar Lower picture exhibits jitter. VD adjustment in still mode


TEST
TP609
CAP DRIVE VOLT
TP602
PB CTL (LIN)
VR402
TP401
TP606
DRUM PG PLS
TP604
CAP FG PLS
TP605
DRUM FG PLS
TP601
GND
TP603
PB CTL PLS
IC601
TP607
DRUM PHASE ERROR
VR601
PG DL
TP608
CAP PHASE ERROR
VR602
INS VD PHASE
TP610
RF SW PLS
VR603
TRACK SUB
TP204
TP402
VR401
TP208
TP209
TP217
VR210
PB Y LEV
TP207
TP216
VR201
RECYLEV
VR205
DEV
VR204
CARRIER
TP203
TP218
TP202
VR206
EE LEV
TP201
VR202
WCLIP
VR203
DCLIP
TP802
TP801
VR801
PBLEV
TP804
IC801
TP803
T801
GND
TP805
VR802
BIAS
VR213
NOI CAN LEV

SERVO * This circuit board is viewed from component side.

4-3. AUDIO CIRCUIT (S/S/A/V board) (N9053G)

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
1	PB Level	AUDIO Output Terminal	VR801 (P.B LEVEL)	● Alignment Tape MH-2 ● Play Back	Adjust VR801 so that the output level of the AUDIO output terminal is set to −8 ± 1 dBs. (Oscilloscope display: 1.1 ± 0.12 Vp-p.) 
2	Head Bias	TP804, GND	VR802 (BIAS LEVEL)	● No signal is input ● REC mode	Adjust VR802 so that the voltage between TP805 ⊕ and GND terminal ⊖ (displayed on the AC millivoltmeter) of the S/S/A/V board is set to 110 ± 10 mVrms.


TP609
CAP DRIVE VOLT
TP602
PB CTL (LIN)
VR402
TP401
TEST
TP606
DRUM PG PLS
TP604
CAP FG PLS
TP605
DRUM FG PLS
TP601
GND
TP603
PB CTL PLS
IC601
TP607
DRUM PHASE ERROR
VR601
PG DL
TP608
CAP PHASE ERROR
VR602
INS VD PHASE
TP610
RF SW PLS
VR603
TRACK SUB
TP402
VR401
TP208
TP209
TP217
VR210
PB Y LEV
TP207
TP204
TP216
VR201
RECYLEV
VR206
EE LEV
TP218
TP202
VR205
DEV
VR204
CARRIER
TP203
TP201
VR212
WCLIP
VR213
DCLIP
TP801
TP802
VR801
PBLEV
TP804
IC801
TP803
T801
GND
TP805
VR802
BIAS
VR213
NOI CAN LEV

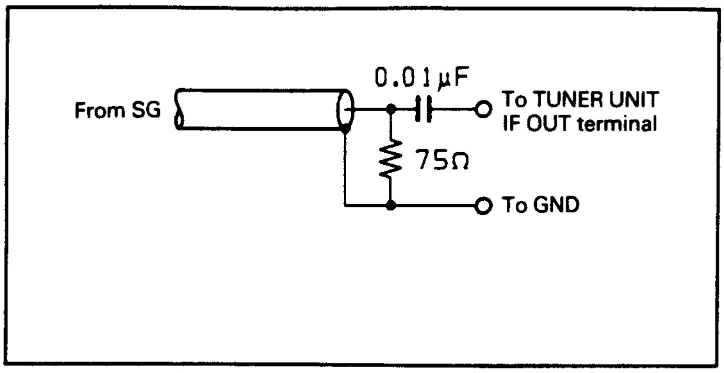
AUDIO

* This circuit board is viewed from component side.

4-4. TUNER/IF CIRCUIT (N9053G)

1 **AFT transformer adjustments**

(1) Connect the 38.9 MHz, 80 dBμ unmodulated signal to the IF output terminal of the Tuner Unit, by using the input pad shown below.
Note that no signal is being input to the ANT IN terminal at this time.


From SG
0.01μF
To TUNER UNIT
IF OUT terminal
75Ω
To GND

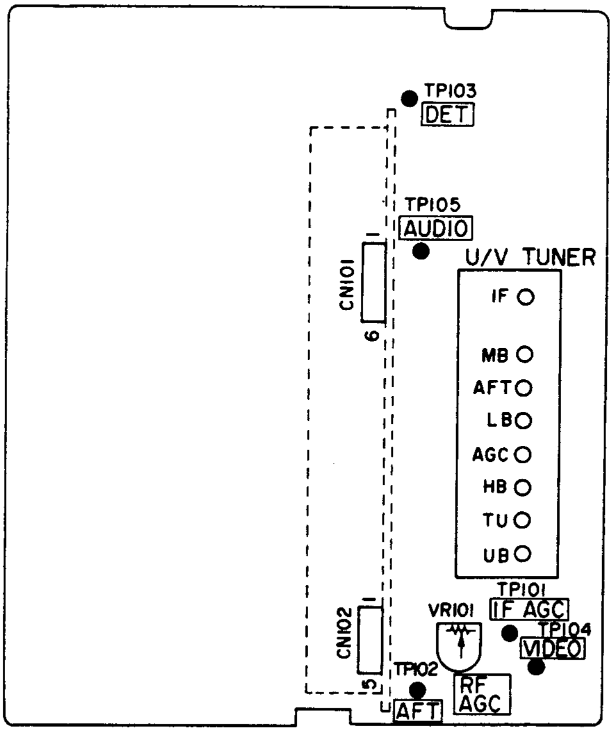
(2) Connect an oscilloscope to TP102 (AFT).

(3) Slowly turn T2 (AFT Transformer) to adjust the output voltage of TP102 to 5.0 ± 0.5 VDC at the point where the voltage suddenly fluctuates. (Do not adjust the voltage to 6.0 VDC.)

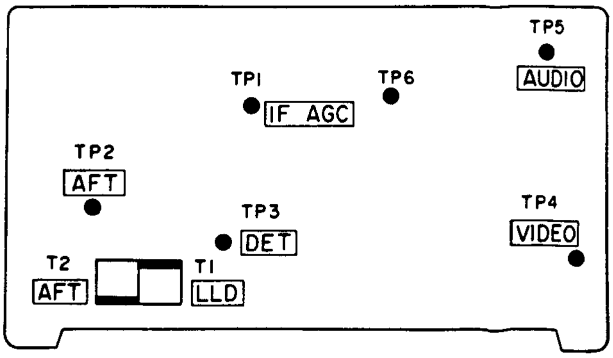
2 **RF AGC adjustments**

(1) Input a 66 dBμ RF signal (channel E7CH) to the ANT IN terminal.

(2) Connect a digital voltmeter to AGC terminal of the TUNER UNIT, and adjust VR101 (RF AGC) so that the voltage at the AGC terminal is set to 6.5 ± 0.5 VDC.

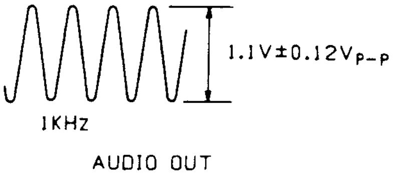

TP103
DET
TP105
AUDIO
U/V TUNER
CN101
1
9
IF
MB
AFT
LB
AGC
HB
TU
UB
CN102
1
5
VR101
TP101
IF AGC
TP104
VIDEO
TP102
AFT
RF AGC

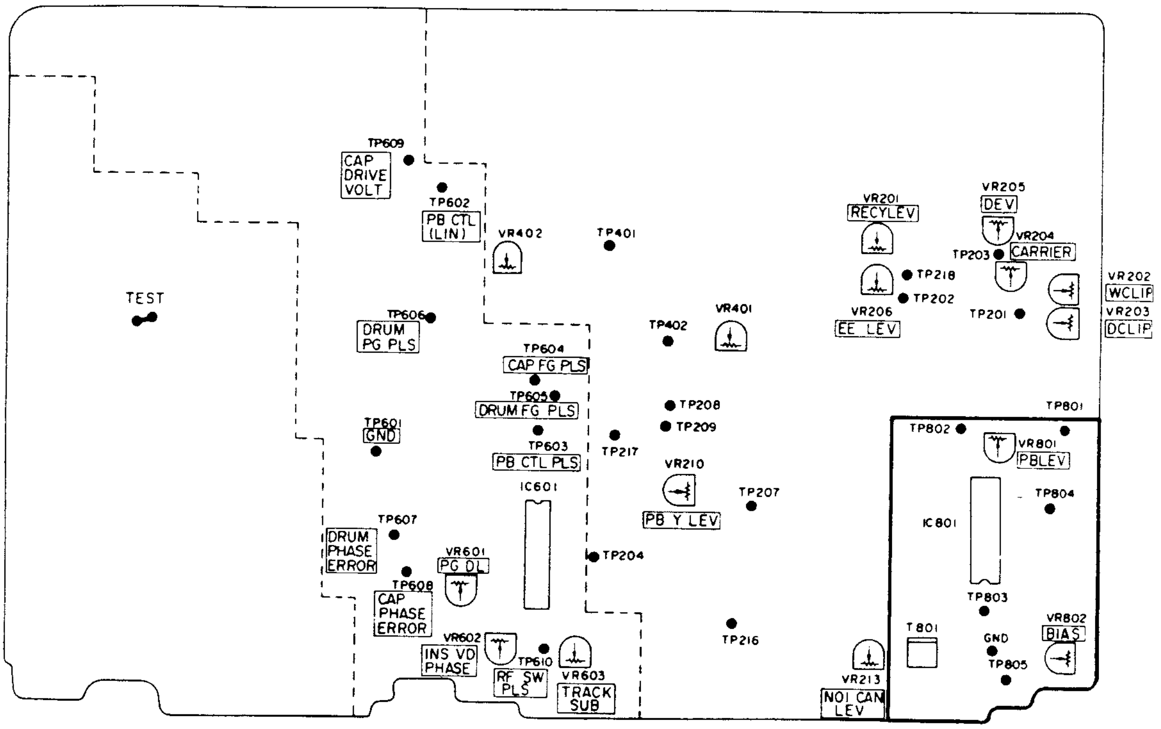
TUNER


TP5
AUDIO
TP1
IF AGC
TP6
TP2
AFT
TP3
DET
TP4
VIDEO
T2
AFT
T1
LLD

IF

4-3. AUDIO CIRCUIT (S/S/A/V board) (N9053G)

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
1	PB Level	AUDIO Output Terminal	VR801 (P.B LEVEL)	● Alignment Tape MH-2 ● Play Back	Adjust VR801 so that the output level of the AUDIO output terminal is set to −8 ± 1 dBs. (Oscilloscope display: 1.1 ± 0.12 Vp-p.)  1.1V±0.12Vp-p 1KHz AUDIO OUT
2	Head Bias	TP804, GND	VR802 (BIAS LEVEL)	● No signal is input ● REC mode	Adjust VR802 so that the voltage between TP805 ⊕ and GND terminal ⊖ (displayed on the AC millivoltmeter) of the S/S/A/V board is set to 110 ± 10 mVrms.



TP609
CAP DRIVE VOLT
TP602
PB CTL (LIN)
VR402
TP401
TEST
TP606
DRUM PG PLS
TP604
CAP FG PLS
TP605
DRUM FG PLS
TP601
GND
TP603
PB CTL PLS
IC601
TP607
DRUM PHASE ERROR
VR601
PG DL
TP608
CAP PHASE ERROR
VR602
INS VD PHASE
TP610
RF SW PLS
VR603
TRACK SUB
TP402
VR401
TP208
TP209
TP217
VR210
PB Y LEV
TP207
TP204
TP216
VR201
RECYLEV
VR205
DEV
VR204
CARRIER
TP203
TP218
TP202
VR206
EE LEV
TP201
VR202
WCLIP
VR203
DCLIP
TP801
TP802
VR801
PBLEV
TP804
IC801
TP803
T801
GND
TP805
VR802
BIAS
VR213
NOI CAN LEV

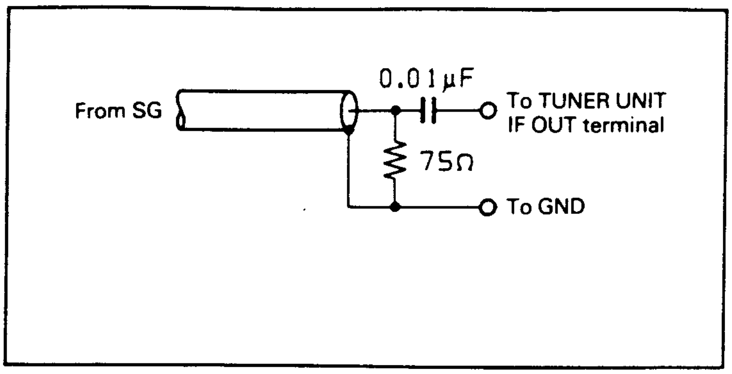
AUDIO

* This circuit board is viewed from component side.

4-4. TUNER/IF CIRCUIT (N9053G)

1 **AFT transformer adjustments**

(1) Connect the 38.9 MHz, 80 dBµ unmodulated signal to the IF output terminal of the Tuner Unit, by using the input pad shown below.
Note that no signal is being input to the ANT IN terminal at this time.


From SG
0.01µF
To TUNER UNIT IF OUT terminal
75Ω
To GND

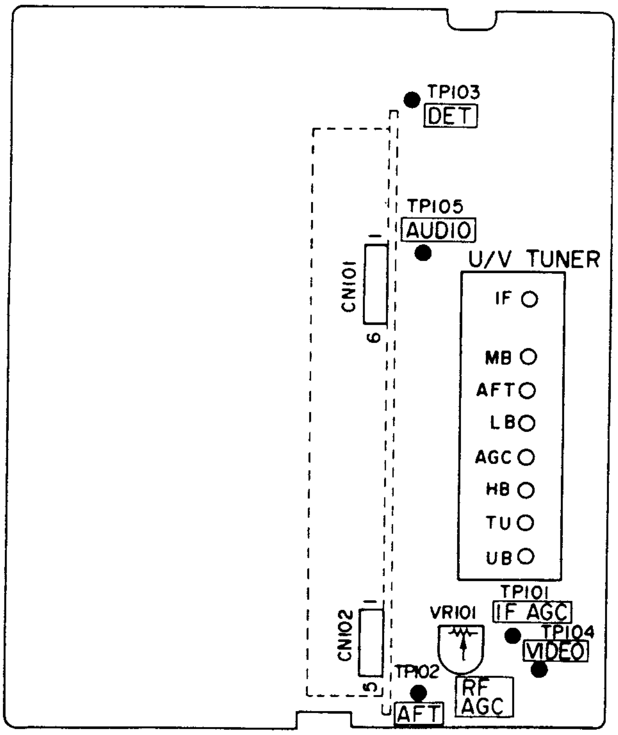
(2) Connect an oscilloscope to TP102 (AFT).

(3) Slowly turn T2 (AFT Transformer) to adjust the output voltage of TP102 to 5.0 ± 0.5 VDC at the point where the voltage suddenly fluctuates. (Do not adjust the voltage to 6.0 VDC.)

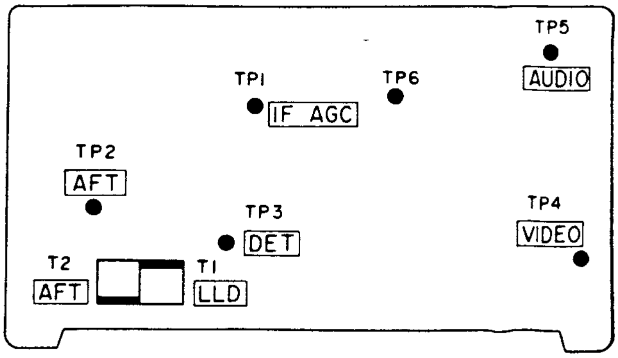
2 **RF AGC adjustments**

(1) Input a 66 dBµ RF signal (channel E7CH) to the ANT IN terminal.

(2) Connect a digital voltmeter to AGC terminal of the TUNER UNIT, and adjust VR101 (RF AGC) so that the voltage at the AGC terminal is set to 6.5 ± 0.5 VDC.


TP103
DET
TP105
AUDIO
U/V TUNER
CN101
1
6
IF
MB
AFT
LB
AGC
HB
TU
UB
CN102
1
5
TP102
AFT
VR101
RF AGC
TP101
IF AGC
TP104
VIDEO

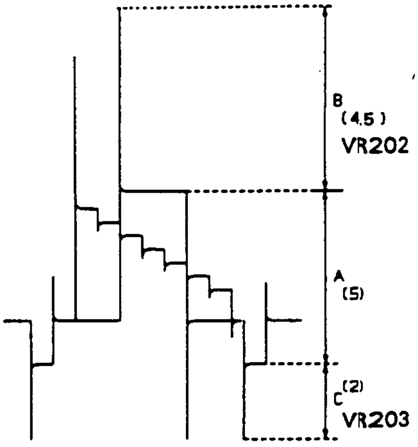
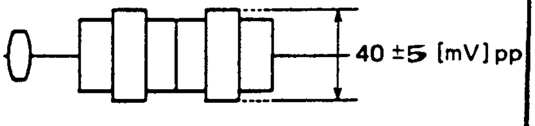
TUNER

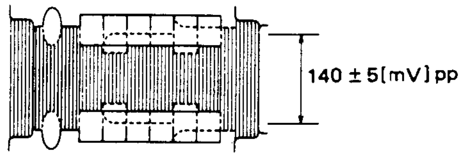
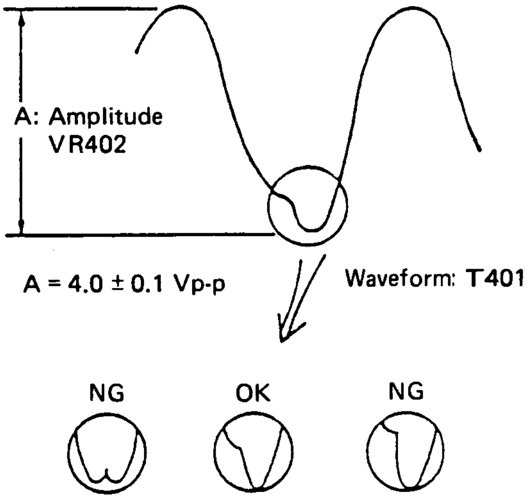

TP5
AUDIO
TP1
IF AGC
TP6
TP2
AFT
TP3
DET
TP4
VIDEO
T2
AFT
T1
LLD

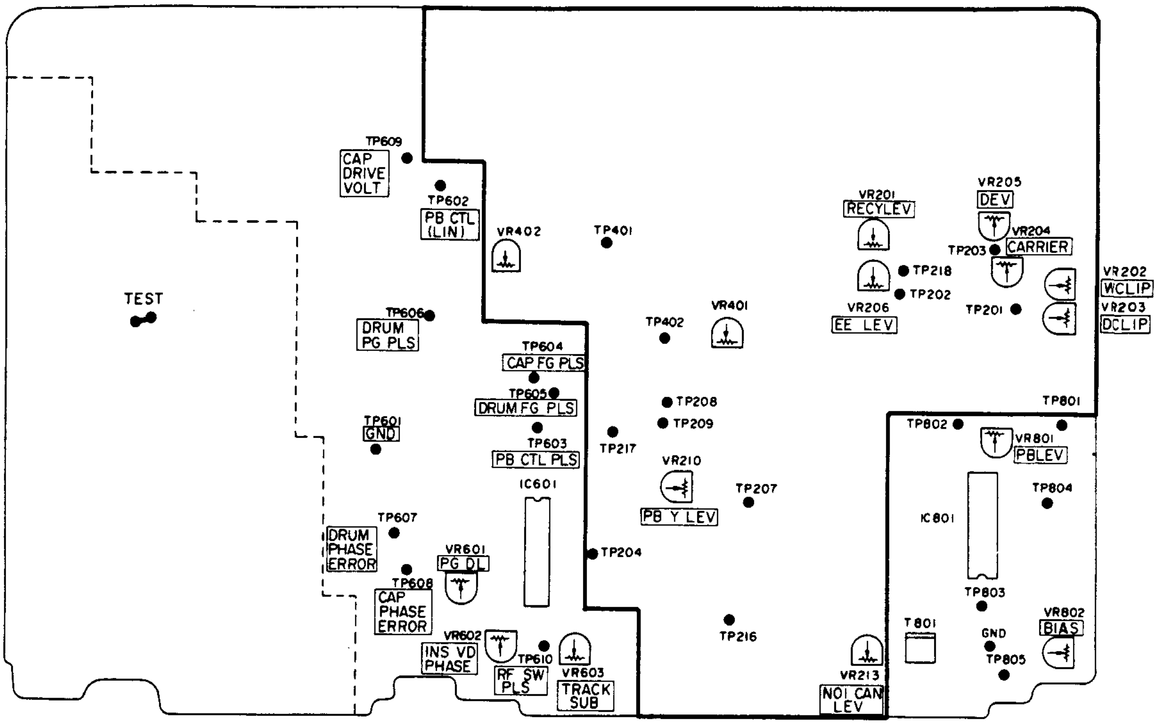
IF

4-5. VIDEO CIRCUIT (S/S/A/V board) (N9053G)

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
1	EE Level	TP901 (Trigger: TP204) of JACK TERMINAL board	VR206	Input (VIDEO IN): PAL Color Bar STOP	1. Input a PAL color bar signal to VIDEO IN. 2. Connect an oscilloscope to TP901. (Terminate VIDEO OUT with 75-ohm impedance.) 3. Adjust VR206 (EE) so that signal issued from sync tip to white peak is set to 1.0 ± 0.1 Vp-p.
2	Carrier Deviation	TP202 TP901 (Trigger: TP204)	VR204 VR210 VR205	REC MH-2	1. Set the INPUT SELECT Switch to LINE. 2. Set the REC mode and connect the frequency counter to TP202. 3. Adjust VR204 (CARRIER) so that the frequency is set to $3.80^{+0.05}_{-0.0}$ MHz. 4. Play back the color bar section of MH-2, and connect an oscilloscope to TP901. 5. Adjust VR210 so that the amplitude of the playback color bar signal is set to 1.0V ± 0.05 Vp-p. 6. Input the color bar signal to the VIDEO IN terminal and record it. Then play this signal back. Connect an oscilloscope to TP901 to measure the amplitude of the playback color bar signal. a) When the measured value is within 1.0 ± 0.1 Vp-p, proceed to the following item. b) When the measured value is not in the 1.0 ± 0.1 Vp-p range, adjust according to procedure 7. 7. Set the unit into the STOP mode: a) When the measured value is less than 0.9 Vp-p, rotate VR205 (DEV) counterclockwise by approx. 10 degrees while observing the PC board from the component surface. (Note: When VR205 is rotated counterclockwise while observing the board from the component surface, the amplitude of the recording signal is increased. When it is rotated clockwise, the amplitude of the recording signal is decreased.) Then record the color bar signal and play it back to confirm that the amplitude is within 1.0 ± 0.1 Vp-p. If the amplitude does not satisfy this range, repeat this procedure as required. If the amplitude is too large, rotate VR205 clockwise and confirm through recording and playback. b) When the measured value exceeds 1.1Vp-p, rotate VR205 (DEV) clockwise by approx. 10 degrees while observing the board from the component surface. Then record the color bar signal and play it back to confirm that the amplitude is within 1.0 ± 0.1 Vp-p. If the amplitude is too small, adjust VR205 in the same manner as noted in Item a). If the amplitude is too large, repeat this procedure as required.

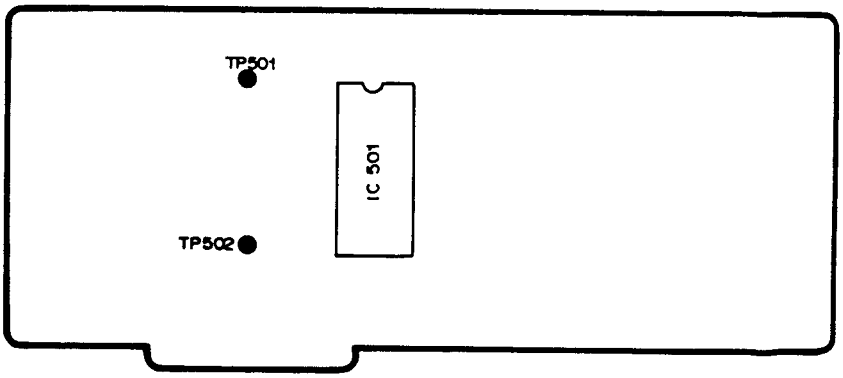
No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
3	White Clip Dark Clip	TP203 (Trigger: TP204)	VR202 (White Clip), VR203 (Dark Clip)	PAL Color Bar, REC	1. Input the PAL color bar signal to the VIDEO IN terminal. 2. Connect an oscilloscope to TP203 of the S/S/A/V board, and adjust the amplitude CAL knob of the oscilloscope so that the distance between sync tip and white peak of the waveform reads 5 scales. 3. Adjust VR202 (WHITE) and VR203 (DARK) so that the waveform overshoot and undershoot satisfy the ratio shown below.  A : B : C = 5 : 4.5 : 2
4	REC Color Level Adjustment	TP501 (Trigger: TP204) of PRE AMP board	VR402	PAL Color Bar REC	1. Input the PAL color bar signal to the VIDEO IN terminal. 2. Connect an oscilloscope to TP501. 3. Rotate VR201 to minimize the FM signal. 4. Adjust VR402 so that the amplitude of color bar signal RED section is set to 40 ± 5 mV. **Note:** Be sure to make the adjustment noted in Item 5 after this adjustment. 

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
5	REC Y FM Level Adjustment	TP501 (Trigger: TP204) (PRE AMP board)	VR201	PAL Color Bar, REC	1. After making the adjustment in Item 5, adjust VR201 so that the amplitude of white peak section is set to 140 ± 5mV. 
6	SECAM DET. sync amplifier oscillating level	TP401	VR402 T401	Input: SECAM color bar signal REC	1. Input a SECAM color bar signal to VIDEO IN. 2. Connect an oscilloscope (10:1) to TP401. 3. Adjust VR402 until the waveform at TP401 appears as shown below in MESECAM mode. (If the waveform appears otherwise, adjust T401.)  A: Amplitude VR402 A = 4.0 ± 0.1 Vp-p Waveform: T401 NG OK NG fh/2 adjustment
7		TP401		MESECAM self recording playback	1. Record SECAM color bar signals in SECAM mode and play back. 2. Connect an oscilloscope (10:1) to TP401. Check that the waveform has an amplitude (A) of 4.0 ± 0.2 Vp-p.


TP609
CAP DRIVE VOLT
TP602
PB CTL (LIN)
VR402
TP401
TEST
TP606
DRUM PG PLS
TP604
CAP FG PLS
TP605
DRUM FG PLS
TP601
GND
TP603
PB CTL PLS
IC601
TP607
DRUM PHASE ERROR
VR601
PG DL
TP608
CAP PHASE ERROR
VR602
INS VD PHASE
TP610
RF SW PLS
VR603
TRACK SUB
TP217
TP204
TP402
VR401
TP208
TP209
VR210
PB Y LEV
TP207
TP216
VR201
RECYLEV
VR206
EE LEV
TP218
TP202
VR205
DEV
VR204
CARRIER
TP203
TP201
VR202
WCLIP
VR203
DCLIP
VR213
NOI CAN LEV
TP802
VR801
PBLEV
TP801
TP804
IC801
TP803
T801
GND
TP805
VR802
BIAS

VIDEO

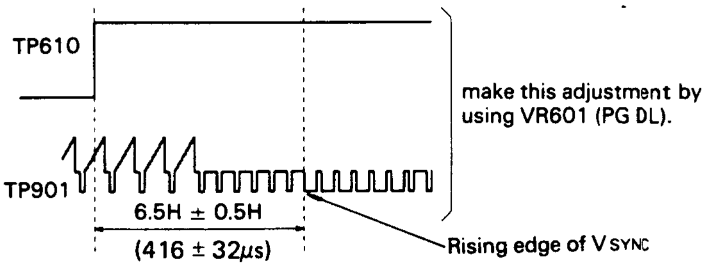
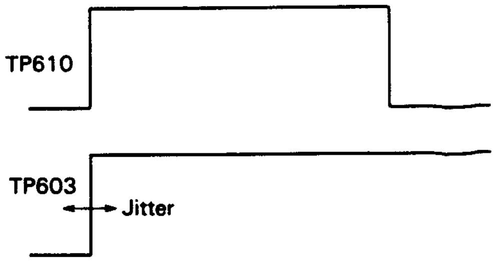
* This circuit board is viewed from component side.

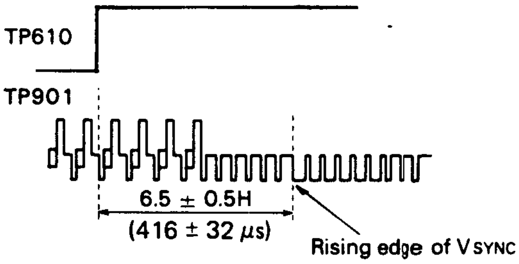

TP501
TP502
IC 501

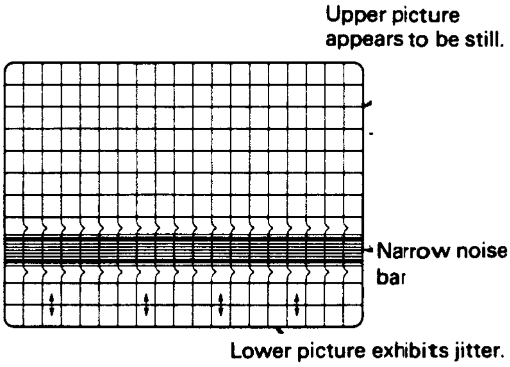
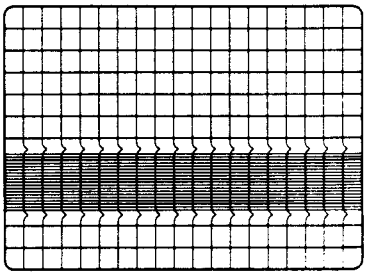
PREAMP

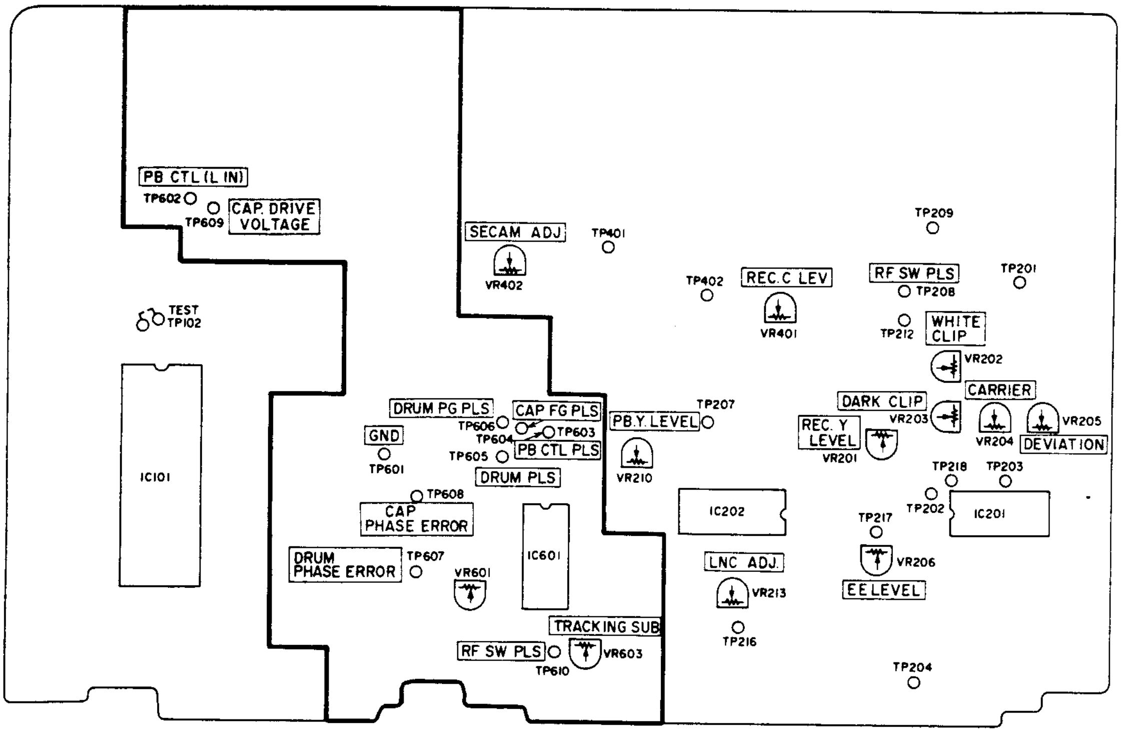
* This circuit board is viewed from component side.

4-2-1 SERVO CIRCUIT (S/S/V board) (N9055G)

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
1	Video Tape Switching Point	TP610 (RF SW PLS) TP901 (VIDEO OUT) (Jack terminal circuit board)	VR601 (PG DL)	MH-2 P.B.	1. Connect an oscilloscope to TP610 and TP901. 2. Play back the alignment tape MH-2 and adjust the tracking VR so that the best-possible picture is obtained on the monitor screen. 3. Adjust VR601 so that the phase relationship between the RF SW pulse and video signal shown below is displayed on the oscilloscope screen.  TP610 TP901 6.5H ± 0.5H (416 ± 32μs) Rising edge of VSYNC make this adjustment by using VR601 (PG DL).
2	Tracking Sub VR	TP610 (RF SW PLS) TP603 (PB CTL PLS)	VR603 (TRACKING SUB)	MH-2 P.B.	1. Connect an oscilloscope to TP610 and TP603. 2. Set the tracking VR to its center detent position. 3. Play back the MH-2 alignment tape, and adjust VR603 so that the phase relationship between the waveforms shown in the figure below is established. (When the oscilloscope is externally triggered by a signal issued from TP610, the waveform of TP603 will exhibit lateral jitter. Adjust VR603 so that the rising edge of TP603 is set to the center of jitter.)  Tracking center adjustment

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
3	Drum Lock Phase (REC TIMING)	TP610 (RF SW PLS) TP901 (VIDEO OUT) (Jack terminal circuit board)	Check	● Color bar ● REC	1. Connect an oscilloscope to TP610 and TP901. 2. Set the REC mode switch to SP, and confirm that the phase relationship between the waveforms of TP610 and TP901 shown in the figure below is established. **Note:** If the tape is seriously damaged, the lock phase will exhibit significant jitter when checking is perfomed. If the tape damage is not serious and the center of the lock phase jitter satisfies the relationship shown below, the tape will be accepted.  TP610 TP901 6.5 ± 0.5H (416 ± 32 μs) Rising edge of VSYNC Drum lock phase

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
4	Insert VD	TV monitor	VR2003 (INS VD) (On SUB FUNCTION board)	● TV signal or cross-hatch pattern ● REC, PB	1. Record the signal for more than 1 minute. 2. Play back the recorded section and advance the frame in the still mode, and adjust it so that two noise bars are not simultaneously displayed on the screen. 3. When a narrow noise bar (there may be two noise bars; narrow and wide) is displayed on the screen, adjust VR2003 to minimize the vertical jitter of the upper picture.  Upper picture appears to be still. Narrow noise bar Lower picture exhibits jitter. VD adjustment in still mode  Example of wide noise bar

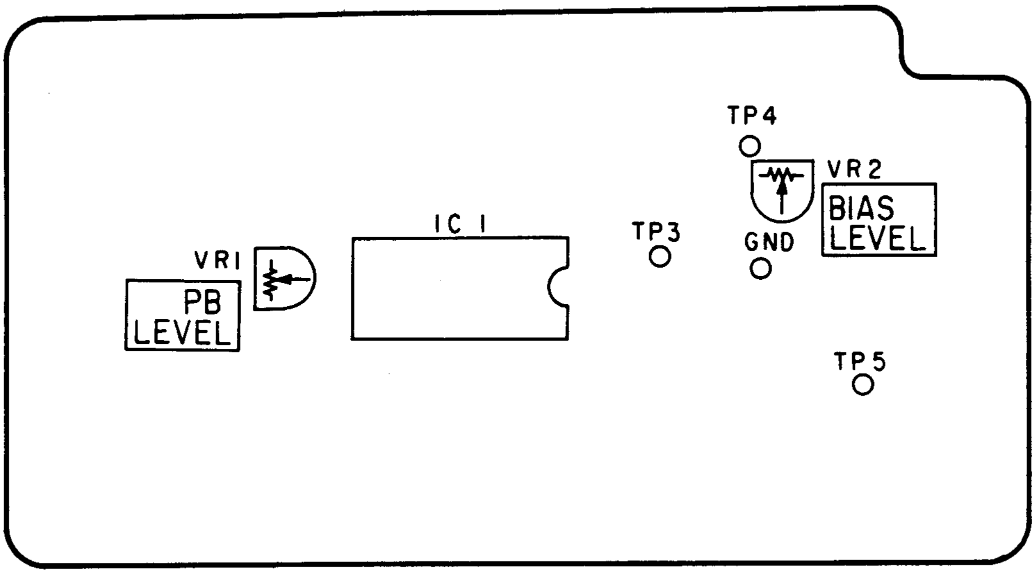

PB CTL (L IN)
TP602
TP609
CAP. DRIVE VOLTAGE
TEST TP102
IC101
SECAM ADJ.
VR402
TP401
TP402
REC.C LEV
VR401
TP209
RF SW PLS
TP208
TP201
TP212
WHITE CLIP
VR202
CARRIER
DARK CLIP
VR203
VR204
VR205
DEVIATION
REC. Y LEVEL
VR201
TP207
DRUM PG PLS
CAP FG PLS
GND
TP606
TP604
TP603
PB CTL PLS
TP605
TP601
DRUM PLS
PB.Y. LEVEL
VR210
TP608
CAP PHASE ERROR
DRUM PHASE ERROR
TP607
VR601
IC601
TRACKING SUB
RF SW PLS
TP610
VR603
IC202
LNC ADJ.
VR213
TP216
TP218
TP203
TP202
TP217
IC201
VR206
EE LEVEL
TP204

SERVO

* This circuit board is viewed from component side.

4-3-1 AUDIO CIRCUIT (AUDIO board) (N9055G)

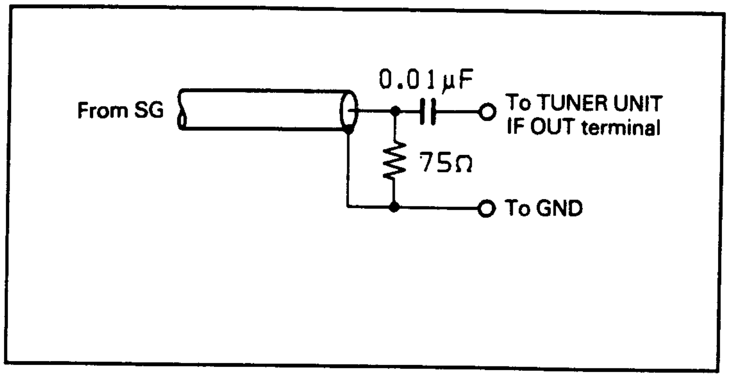
No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
1	PB Level	AUDIO Output Terminal	VR1 (P.B LEVEL)	● Alignment Tape MH-2	Adjust VR1 so that the output level of the AUDIO output terminal is set to −8 dBs ± 1 dBs.
2	Head Bias	AUDIO board TP4, GND	VR2 (BIAS LEVEL)	● No signal is input ● SP (2H) REC mode	Adjust VR2 so that the voltage between TP4 ⊕ and GND terminal ⊖ (displayed on the AC millivoltmeter) of the AUDIO board is set to 110 ± 10mVrms.

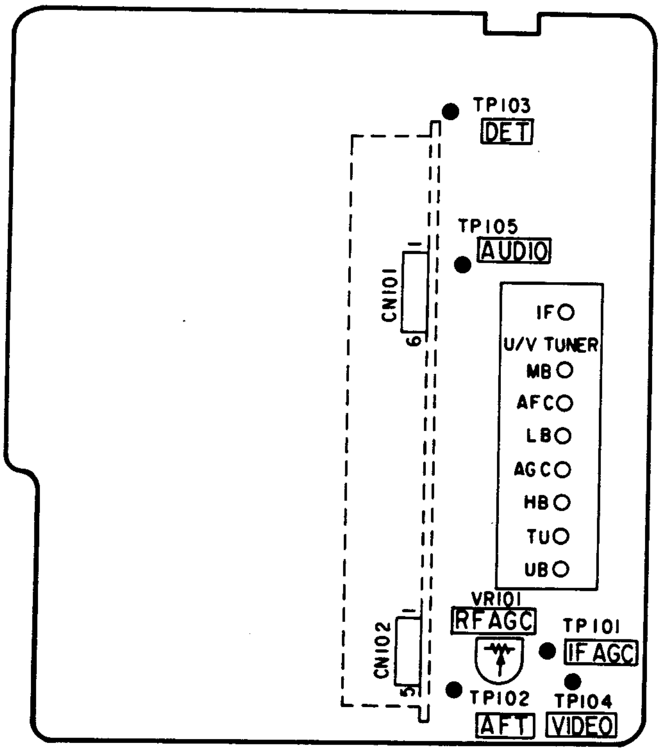


AUDIO

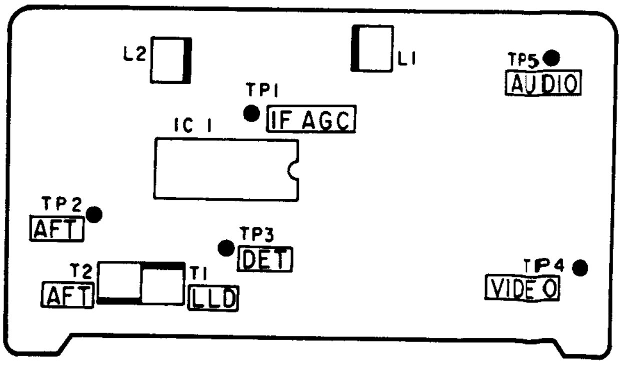
* This circuit board is viewed from component side.

4-4-1 TUNER/IF CIRCUIT (N9055G)

1	**AFT transformer adjustments** (1) Connect the 38.9 MHz 80 dBμ unmodulated signal to the IF output terminal of the Tuner Unit, by using the input pad shown below. Note that no signal is being input to the ANT IN terminal at this time.  0.01μF From SG To TUNER UNIT IF OUT terminal 75Ω To GND (2) Connect an oscilloscope to TP102 (AFT). (3) Slowly turn T2 (AFT Transformer) to adjust the output voltage of TP102 to 5.0 ± 0.5 VDC at the point where the voltage suddenly fluctuates. (Do not adjust the voltage to 6.0 VDC.)
2	**RF AGC adjustments** (1) Input a 66 dBμ RF signal (channel E7CH) to the ANT IN terminal. (2) Connect a digital voltmeter to AGC terminal of the TUNER UNIT, and adjust VR101 (RF AGC) so that the voltage at the AGC terminal is set to 6.5 ±0.5 VDC.


TP103
DET
TP105
AUDIO
CN101
1
6
IF
U/V TUNER
MB
AFC
LB
AGC
HB
TU
UB
VR101
RF AGC
TP101
IF AGC
CN102
1
5
TP102
AFT
TP104
VIDEO

TUNER

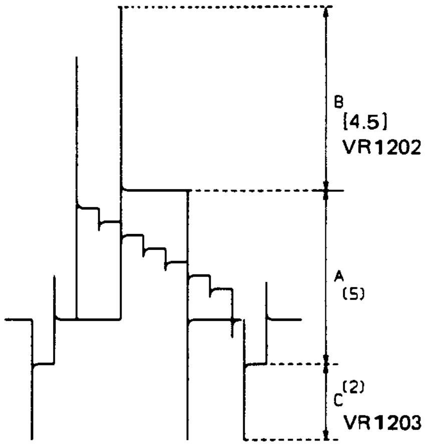
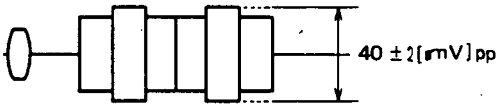

L2
L1
TP5
AUDIO
TP1
IF AGC
IC 1
TP2
AFT
TP3
DET
T2
AFT
T1
LLD
TP4
VIDEO

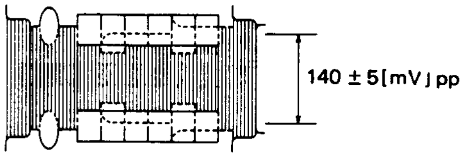
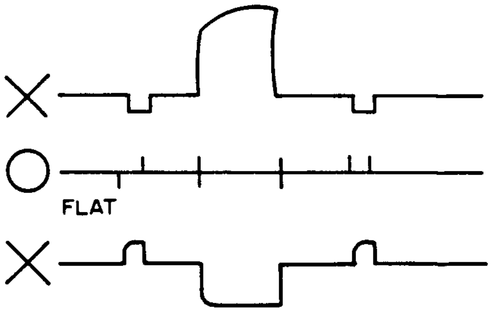
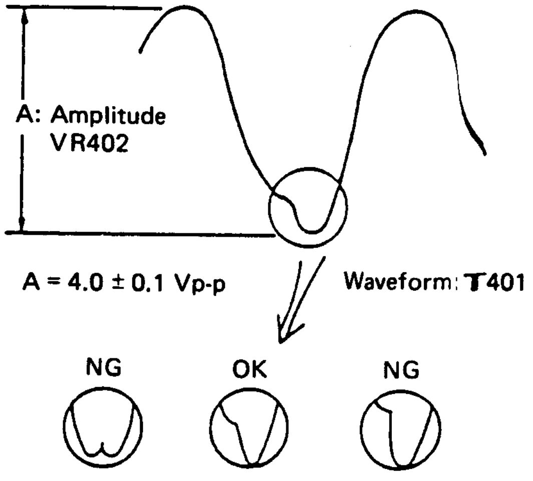
IF

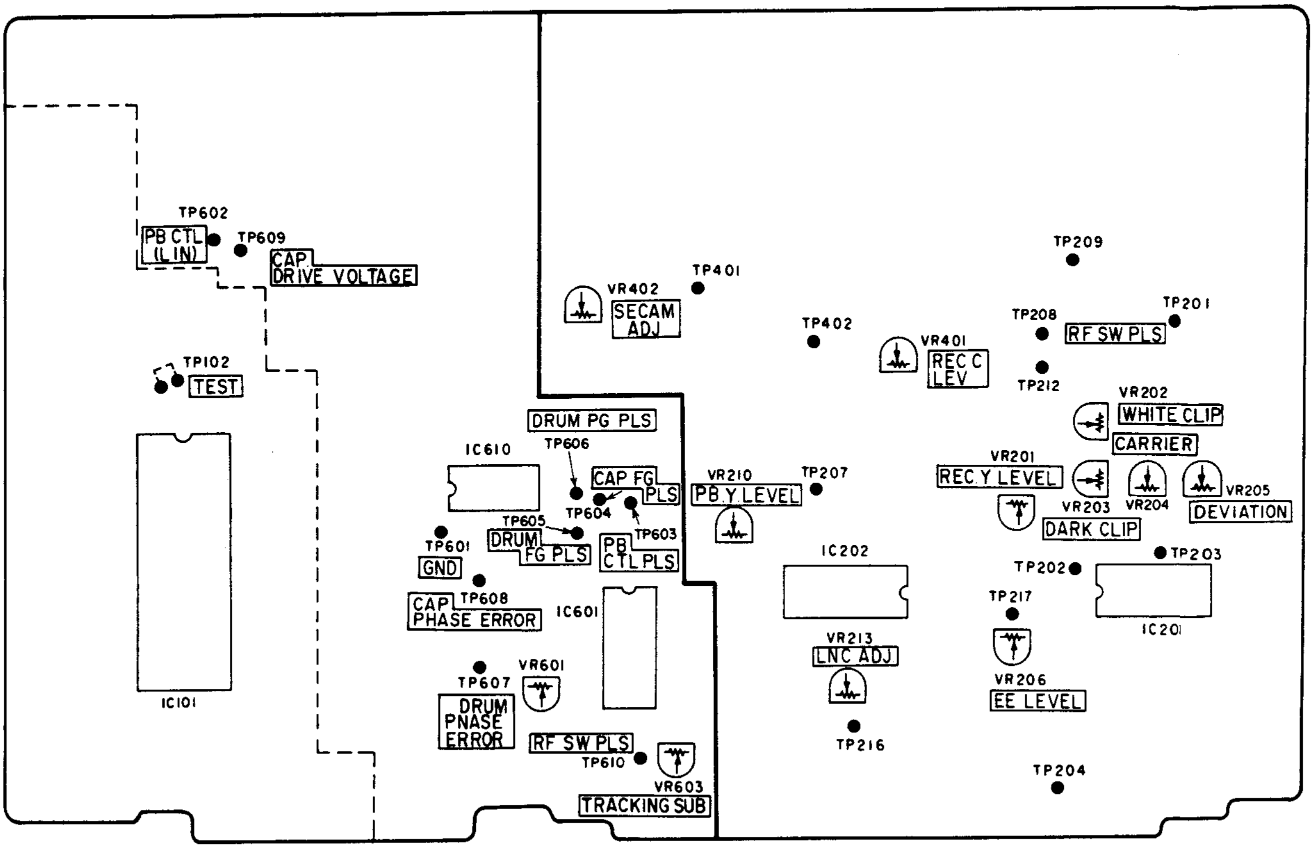
* This circuit board is viewed from component side.

4-5-1 VIDEO CIRCUIT (S/S/V board) (N9055G)

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
1	EE Level	TP1901 (Trigger: TP204) of JACK TERMINAL board	VR1206	Input (VIDEO IN). PAL Color Bar STOP	1. Input a color bar signal to VIDEO IN. 2. Connect an oscilloscope to TP901. (Terminate VIDEO OUT with 75-ohm impedance.) 3. Adjust VR206 (EE) so that signal issued from sync tip to white peak is set to 1.0 ± 0.1 Vp-p.
2	Carrier Deviation	TP1202	VR1204	REC	1. Set the IN PUT SELECT switch to LINE. 2. Set the REC mode, and connect the frequency counter to TP1202. 3. Adjust VR1204 (CARRIER) so that the frequency is set to $3.80^{+0.05}_{-0.0}$ MHz.
		TP1901 (Trigger: TP1204)	VR1210	MH-2	4. Play back the color bar section of MH-2, and connect anoscilloscope to TP1901. 5. Adjust VR1201 so that the amplitude of the playback color signal is set to 1.0V ± 0.05 Vp-p. 6. Input the color bar signal to the VIDEO IN terminal and record it. Then play this signal back. Connect an oscilloscope to TP901 to measure the amplitude of the playback color bar signal. a) When the measured value is within 1.0 ± 0.1 Vp-p, proceed to the following item. b) When the measured value is not in the 1.0 ± 0.1 Vp-p range, adjust according to procedure 7.
			VR1205		7. Set the unit into the STOP mode: a) When the measured value is less than 0.9 Vp-p, rotate VR1205 (DEV) counterclockwise by approx. 10 degrees while observing the PC board from the component surface. (Note: When VR1205 is rotated couterclockwise while observing the board from the component surface, the amplitude of the recording signal is increased. When it is rotated clockwise, the amplitude of the recording signal is decreased.) Then record the color bar signal and play it back to confirm that the amplitude is within 1.0 ± 0.1 Vp-p. If the amplitude does not satisfy this range, repeat this procedure as reqired. If the amplitude is too large, rotate VR1205 clockwise and confirm through recording and playback. b) When the measured value exceeds 1.1 Vp-p, rotate VR1205 (DEV) clockwise by approx. degrees while observing the board from the component surface. Then record the color bar signal and play it back to confirm that the amplitude is within 1.0 ± 0.1 Vp-p. If the amplitude is too small, adjust VR1205 in same manner as noted in Item a). If the amplitude is too large, repeat this procedure as requred.

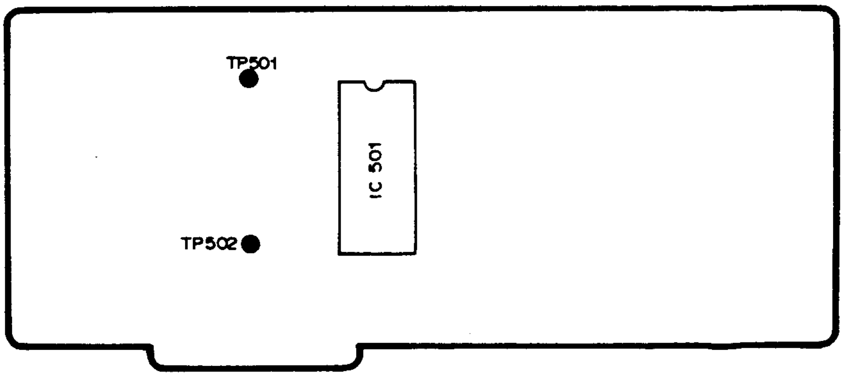
No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
3	White Clip Dark Clip	TP1203 (Trigger: TP1204)	VR1202 (White Clip), VR1203 (Dark Clip)	PAL Color Bar, REC	1. Input the color bar signal to the VIDEO IN terminal. 2. Connect an oscilloscope to TP1203 of the S/S/V board, and adjust the amplitude CAL knob of the oscilloscope so that the distance between sync tip and white peak of the waveform reads 5 scales. 3. Adjust VR1202 (WHITE) and VR1203 (DARK) so that the waveform overshoot and undershoot satisfy the ratio shown below.  A : B : C = 5 : 4.5 : 2
4	VCO Frequency Adjustment	TP1401	VR1401	SP, (2H), MH-2 (Color Bar) Playback	1. Connect a digital multimeter or tester to TP1401. (The oscilloscope DC range can be used as a substitute.) 2. Playback the color bar section of MH-2. 3. Adjust VR1401 so that the DC voltage of TP1401 is set to 2.5 ± 0.02 VDC.
5	REC Color Level Adjustment	TP1501 (Trigger: TP1205) of PRE AMP board	VR1402	PAL, Color Bar REC	1. Input the color bar signal to the VIDEO IN terminal. 2. Connect an oscilloscope to TP1501. 3. Rotate VR1201 to minimize the FM signal. 4. Adjust VR1402 so that the awplitude of color bar signal RED section is set to 40 ± 2 mV. **Note:** Be sure to make the adjustment noted in Item 6 after this adjustment. 

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
6	REC Y FM Level Adjustment	TP1501 (Trigger: TP1204 (PRE AMP board)	VR1201	PAL Color Bar, REC	1. After making the adjustment in Item 5, adjust VR1201 so that the amplitude of white peak section is set to 140 ± 5 mV. 
7	Noise Cancel Level Adjustment	TP1207 (Trigger TP1204) of S/S/V board	VR1213 of S/S/V board	PB	Play back the tape prerecorded and adjust VR1213 so that TP1207 waveforms of the S/S/V board are flat. AT this time, waveform difference should be less than 20 mVpp. 
8	SECAM DET. sync amplifier oscillating level	TP401	VR402 T401	Input: SECAM color bar signal REC	1. Input a SECAM color bar signal to VIDEO IN. 2. Connect an oscilloscope (10:1) to TP401. 3. Adjust VR402 until the waveform at TP401 appears as shown below in MESECAM mode. (If the waveform appears otherwise, adjust T401.)  A: Amplitude VR402 A = 4.0 ± 0.1 Vp-p Waveform: T401 NG OK NG fh/2 adjustment
9		TP401		MESECAM self recording playback	1. Record SECAM color bar signals in SECAM mode and play back. 2. Connect an oscilloscope (10:1) to TP401. Check that the waveform has an amplitude (A) of 4.0 ± 0.2 Vp-p.


TP602
PB CTL (LIN)
TP609
CAP DRIVE VOLTAGE
TP102
TEST
IC101
VR402
SECAM ADJ
TP401
TP402
VR401
REC C LEV
TP209
TP208
TP201
RF SW PLS
TP212
VR202
WHITE CLIP
CARRIER
DRUM PG PLS
IC610
TP606
CAP FG PLS
TP604
TP605
TP603
TP601
DRUM FG PLS
PB CTL PLS
GND
TP608
CAP PHASE ERROR
IC601
VR210
PB Y LEVEL
TP207
VR201
REC Y LEVEL
VR203
VR204
VR205
DARK CLIP
DEVIATION
IC202
TP202
TP203
TP217
IC201
VR213
LNC ADJ
VR206
EE LEVEL
TP607
VR601
DRUM PNASE ERROR
RF SW PLS
TP610
VR603
TRACKING SUB
TP216
TP204

VIDEO

* This circuit board is viewed from component side.

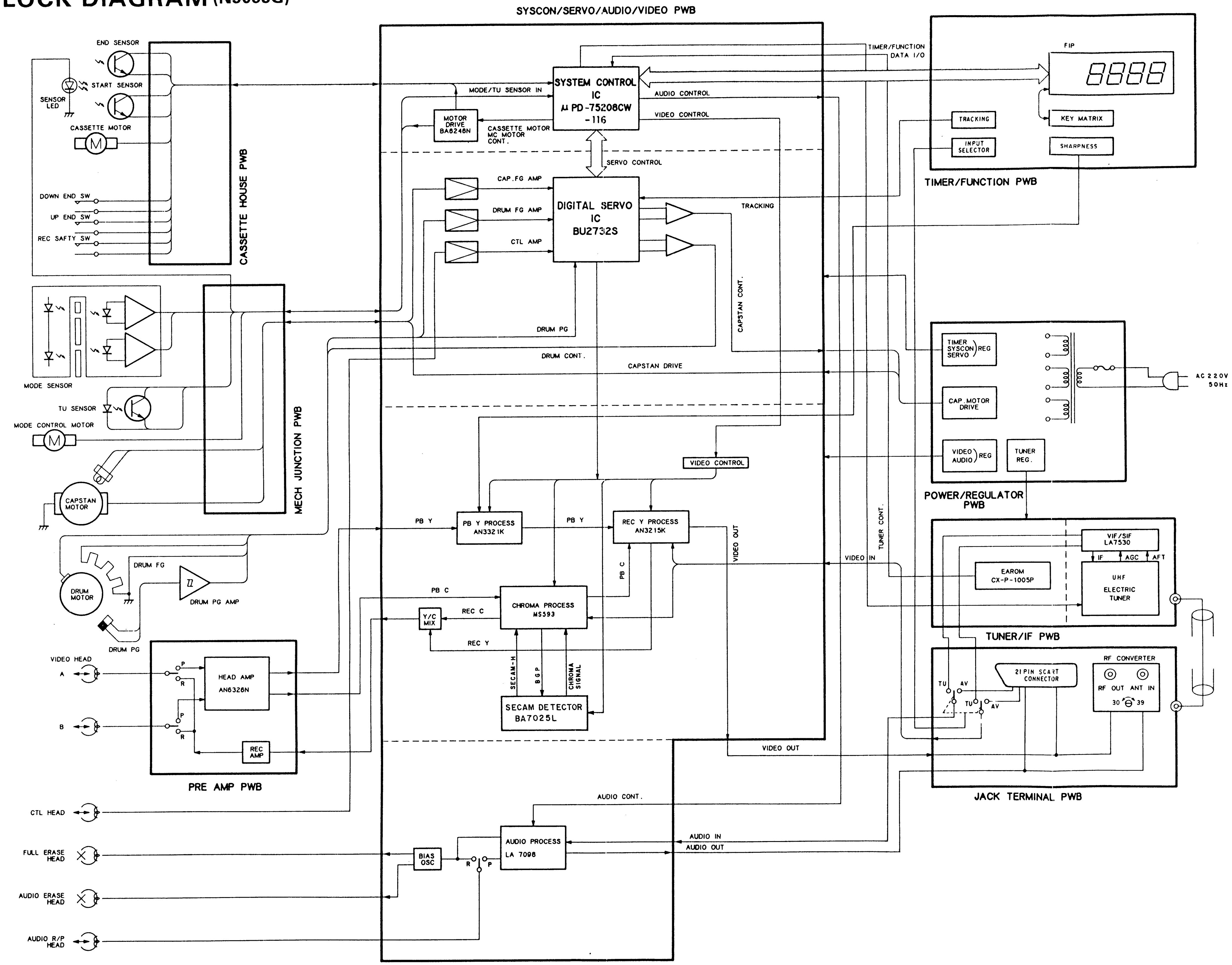

TP501
IC 501
TP502

PREAMP

* This circuit board is viewed from component side.

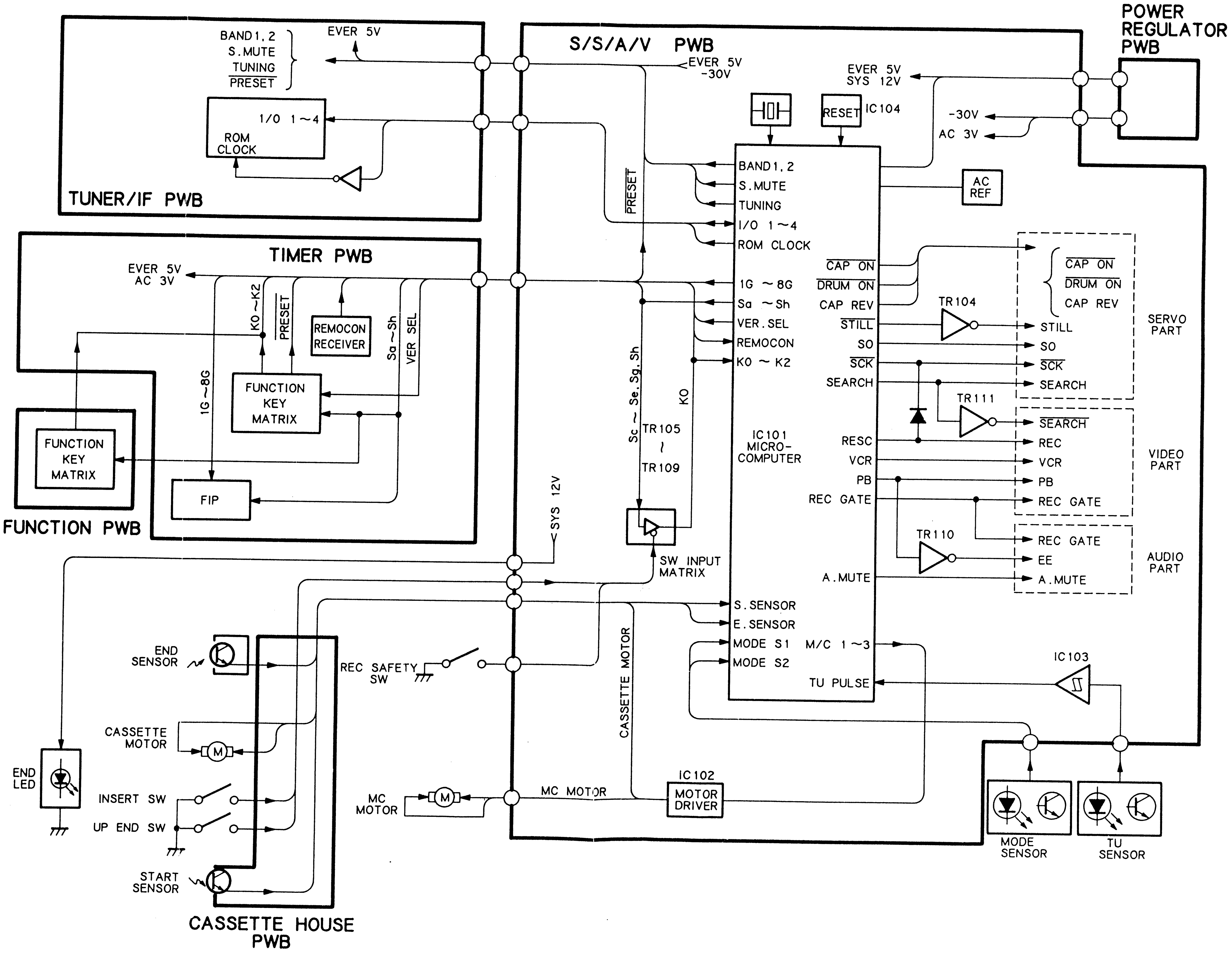
SECTION 4
DIAGRAMS AND TIMING CHARTS (N9053G)

1. GENERAL BLOCK DIAGRAM (N9053G)

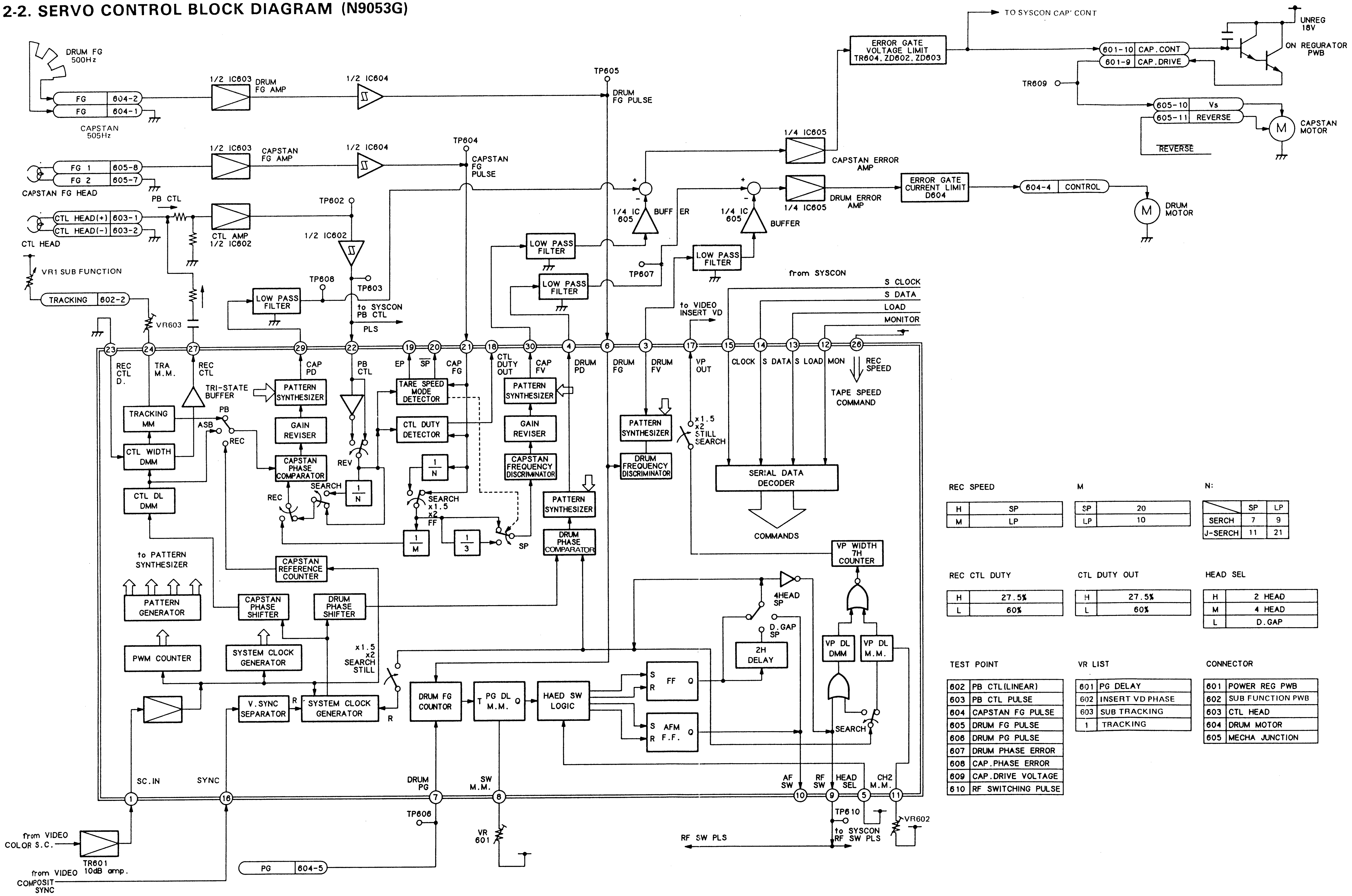

SYSCON/SERVO/AUDIO/VIDEO PWB
END SENSOR
START SENSOR
SENSOR LED
CASSETTE MOTOR
DOWN END SW
UP END SW
REC SAFTY SW
CASSETTE HOUSE PWB
MODE SENSOR
TU SENSOR
MODE CONTROL MOTOR
CAPSTAN MOTOR
MECH JUNCTION PWB
DRUM FG
DRUM MOTOR
DRUM PG AMP
DRUM PG
VIDEO HEAD
A
B
P
R
HEAD AMP
AN6326N
REC AMP
PRE AMP PWB
CTL HEAD
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO R/P HEAD
MODE/TU SENSOR IN
MOTOR DRIVE BA6246N
CASSETTE MOTOR
MC MOTOR CONT.
SYSTEM CONTROL IC
μ PD-75208CW -116
AUDIO CONTROL
VIDEO CONTROL
SERVO CONTROL
CAP.FG AMP
DRUM FG AMP
CTL AMP
DIGITAL SERVO IC
BU2732S
TRACKING
CAPSTAN CONT.
DRUM PG
DRUM CONT.
CAPSTAN DRIVE
VIDEO CONTROL
PB Y
PB Y PROCESS
AN3321K
PB Y
REC Y PROCESS
AN3215K
VIDEO OUT
PB C
PB C
CHROMA PROCESS
M5393
REC C
Y/C MIX
REC Y
SECAM-H
BGP
CHROMA SIGNAL
SECAM DETECTOR
BA7025L
VIDEO OUT
AUDIO CONT.
AUDIO PROCESS
LA 7098
BIAS OSC
R
P
AUDIO IN
AUDIO OUT
TIMER/FUNCTION
DATA I/O
FIP
8888
TRACKING
INPUT SELECTOR
KEY MATRIX
SHARPNESS
TIMER/FUNCTION PWB
TIMER SYSCON SERVO REG
CAP MOTOR DRIVE
VIDEO AUDIO REG
TUNER REG.
AC 220V 50Hz
POWER/REGULATOR PWB
TUNER CONT.
VIDEO IN
VIF/SIF
LA7530
IF
AGC
AFT
EAROM
CX-P-1005P
UHF ELECTRIC TUNER
TUNER/IF PWB
21PIN SCART CONNECTOR
TU
AV
TU
AV
RF CONVERTER
RF OUT
ANT IN
30
39
JACK TERMINAL PWB

2. BLOCK DIAGRAM

2-1. SYSTEM CONTROL BLOCK DIAGRAM (N9053G)


POWER REGULATOR PWB
S/S/A/V PWB
TUNER/IF PWB
BAND 1, 2
S. MUTE
TUNING
PRESET
EVER 5V
I/O 1~4
ROM CLOCK
EVER 5V
-30V
EVER 5V
SYS 12V
-30V
AC 3V
RESET
IC104
AC REF
TIMER PWB
EVER 5V
AC 3V
KO~K2
PRESET
REMOCON RECEIVER
Sa~Sh
VER SEL
1G~8G
FUNCTION KEY MATRIX
FIP
FUNCTION KEY MATRIX
FUNCTION PWB
PRESET
Sc ~ Se, Sg, Sh
KO
TR105 ~ TR109
SYS 12V
SW INPUT MATRIX
BAND 1, 2
S. MUTE
TUNING
I/O 1~4
ROM CLOCK
1G ~ 8G
Sa ~ Sh
VER. SEL
REMOCON
KO ~ K2
IC101 MICRO-COMPUTER
CAP ON
DRUM ON
CAP REV
STILL
SO
SCK
SEARCH
RESC
VCR
PB
REC GATE
A. MUTE
S. SENSOR
E. SENSOR
MODE S1
MODE S2
M/C 1~3
TU PULSE
TR104
TR111
TR110
CAP ON
DRUM ON
CAP REV
STILL
SO
SCK
SEARCH
SERVO PART
SEARCH
REC
VCR
PB
REC GATE
VIDEO PART
REC GATE
EE
A. MUTE
AUDIO PART
IC103
END SENSOR
CASSETTE MOTOR
INSERT SW
UP END SW
START SENSOR
END LED
CASSETTE HOUSE PWB
REC SAFETY SW
CASSETTE MOTOR
MC MOTOR
MC MOTOR
IC102
MOTOR DRIVER
MODE SENSOR
TU SENSOR

2-2. SERVO CONTROL BLOCK DIAGRAM (N9053G)


DRUM FG 500Hz
FG 604-2
FG 604-1
CAPSTAN 505Hz
1/2 IC603 DRUM FG AMP
1/2 IC604
TP605
DRUM FG PULSE
FG 1 605-8
FG 2 605-7
CAPSTAN FG HEAD
1/2 IC603 CAPSTAN FG AMP
1/2 IC604
TP604
CAPSTAN FG PULSE
PB CTL
CTL HEAD(+) 603-1
CTL HEAD(-) 603-2
CTL HEAD
CTL AMP 1/2 IC602
TP602
1/2 IC602
VR1 SUB FUNCTION
TRACKING 602-2
VR603
TP608
LOW PASS FILTER
TP603
to SYSCON PB CTL
PLS
TO SYSCON CAP' CONT
ERROR GATE VOLTAGE LIMIT TR604, ZD602, ZD603
601-10 CAP.CONT
601-9 CAP.DRIVE
UNREG 18V
ON REGURATOR PWB
TR609
605-10 Vs
605-11 REVERSE
REVERSE
CAPSTAN MOTOR
M
1/4 IC605
CAPSTAN ERROR AMP
DRUM ERROR AMP
1/4 IC605
ERROR GATE CURRENT LIMIT D604
604-4 CONTROL
DRUM MOTOR
1/4 IC 605 BUFFER
ER
1/4 IC 605
BUFFER
LOW PASS FILTER
LOW PASS FILTER
TP607
LOW PASS FILTER
from SYSCON
S CLOCK
S DATA
LOAD
MONITOR
to VIDEO INSERT VD
23 24 27 29 22 19 20 21 18 30 4 6 3 17 15 14 13 12 26
REC CTL D.
TRA M.M.
REC CTL
TRI-STATE BUFFER
CAP PD
PB CTL
EP
SP
CAP FG
CTL DUTY OUT
CAP FV
DRUM PD
DRUM FG
DRUM FV
VP OUT
CLOCK
S DATA
S LOAD
MON
REC SPEED
TAPE SPEED COMMAND
TRACKING MM
PB
ASB
REC
CTL WIDTH DMM
CTL DL DMM
PATTERN SYNTHESIZER
GAIN REVISER
CAPSTAN PHASE COMPARATOR
REV
SEARCH
1/N
REC
TARE SPEED MODE DETECTOR
CTL DUTY DETECTOR
1/N
SEARCH x1.5 x2 FF
1/M
1/3
SP
PATTERN SYNTHESIZER
GAIN REVISER
CAPSTAN FREQUENCY DISCRIMINATOR
PATTERN SYNTHESIZER
DRUM PHASE COMPARATOR
PATTERN SYNTHESIZER
DRUM FREQUENCY DISCRIMINATOR
x1.5 x2 STILL SEARCH
SERIAL DATA DECODER
COMMANDS
VP WIDTH 7H COUNTER
to PATTERN SYNTHESIZER
PATTERN GENERATOR
CAPSTAN REFERENCE COUNTER
CAPSTAN PHASE SHIFTER
DRUM PHASE SHIFTER
PWM COUNTER
SYSTEM CLOCK GENERATOR
x1.5 x2 SEARCH STILL
4HEAD SP
D.GAP SP
2H DELAY
VP DL DMM
VP DL M.M.
V.SYNC SEPARATOR
R
SYSTEM CLOCK GENERATOR
R
DRUM FG COUNTOR
T PG DL M.M. Q
HAED SW LOGIC
S FF Q R
S AFM F.F. Q R
SEARCH
SC.IN
SYNC
DRUM PG
SW M.M.
AF SW
RF SW
HEAD SEL
CH2 M.M.
1 16 7 8 10 9 5 11
TP606
VR 601
TP610
to SYSCON RF SW PLS
RF SW PLS
VR602
from VIDEO COLOR S.C.
TR601 10dB amp.
from VIDEO COMPOSIT SYNC
PG 604-5

REC SPEED

H	SP
M	LP

M

SP	20
LP	10

N:

	SP	LP
SERCH	7	9
J-SERCH	11	21

REC CTL DUTY

H	27.5%
L	60%

CTL DUTY OUT

H	27.5%
L	60%

HEAD SEL

H	2 HEAD
M	4 HEAD
L	D.GAP

TEST POINT

602	PB CTL(LINEAR)
603	PB CTL PULSE
604	CAPSTAN FG PULSE
605	DRUM FG PULSE
606	DRUM PG PULSE
607	DRUM PHASE ERROR
608	CAP.PHASE ERROR
609	CAP.DRIVE VOLTAGE
610	RF SWITCHING PULSE

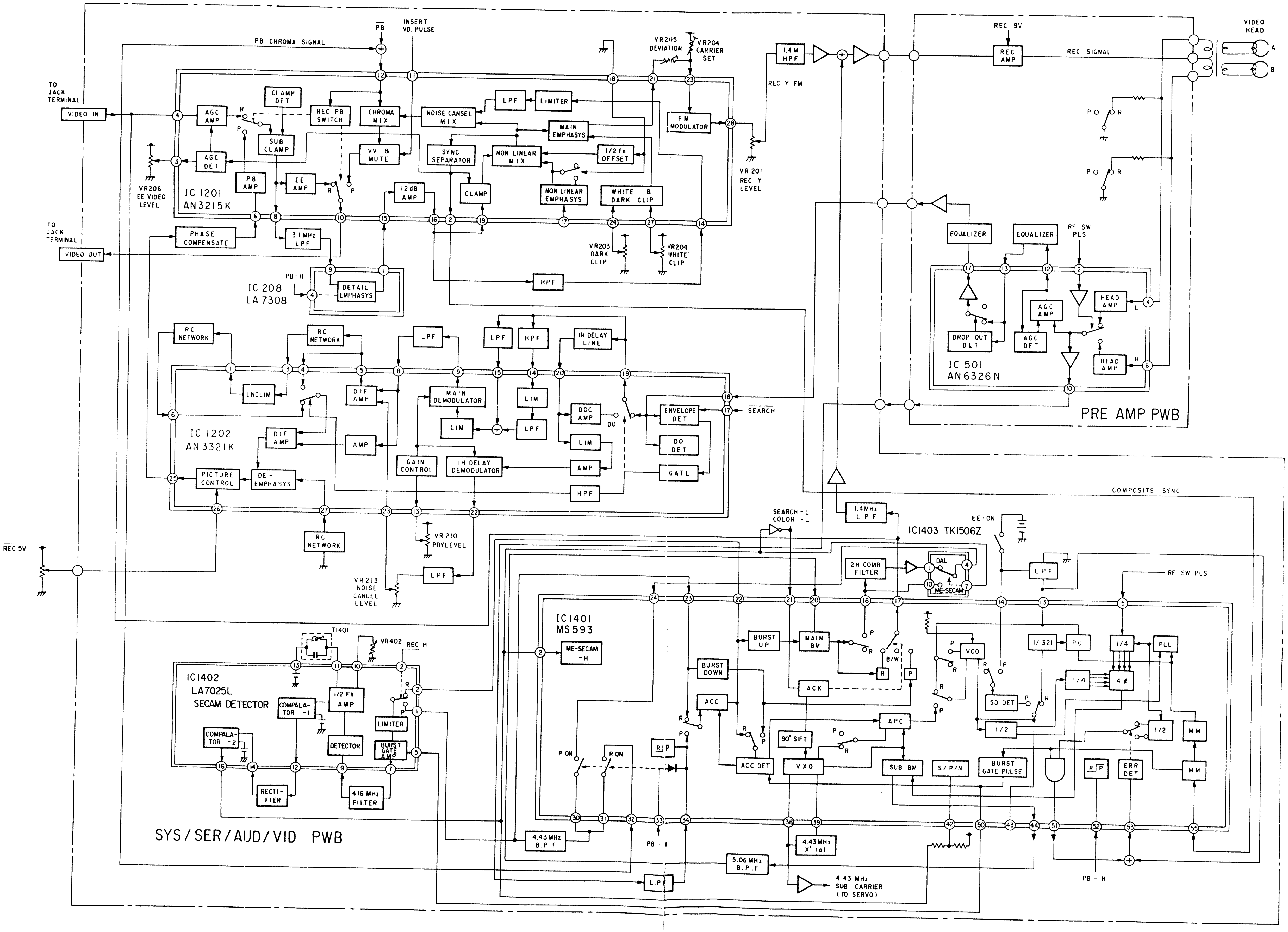
VR LIST

601	PG DELAY
602	INSERT VD PHASE
603	SUB TRACKING
1	TRACKING

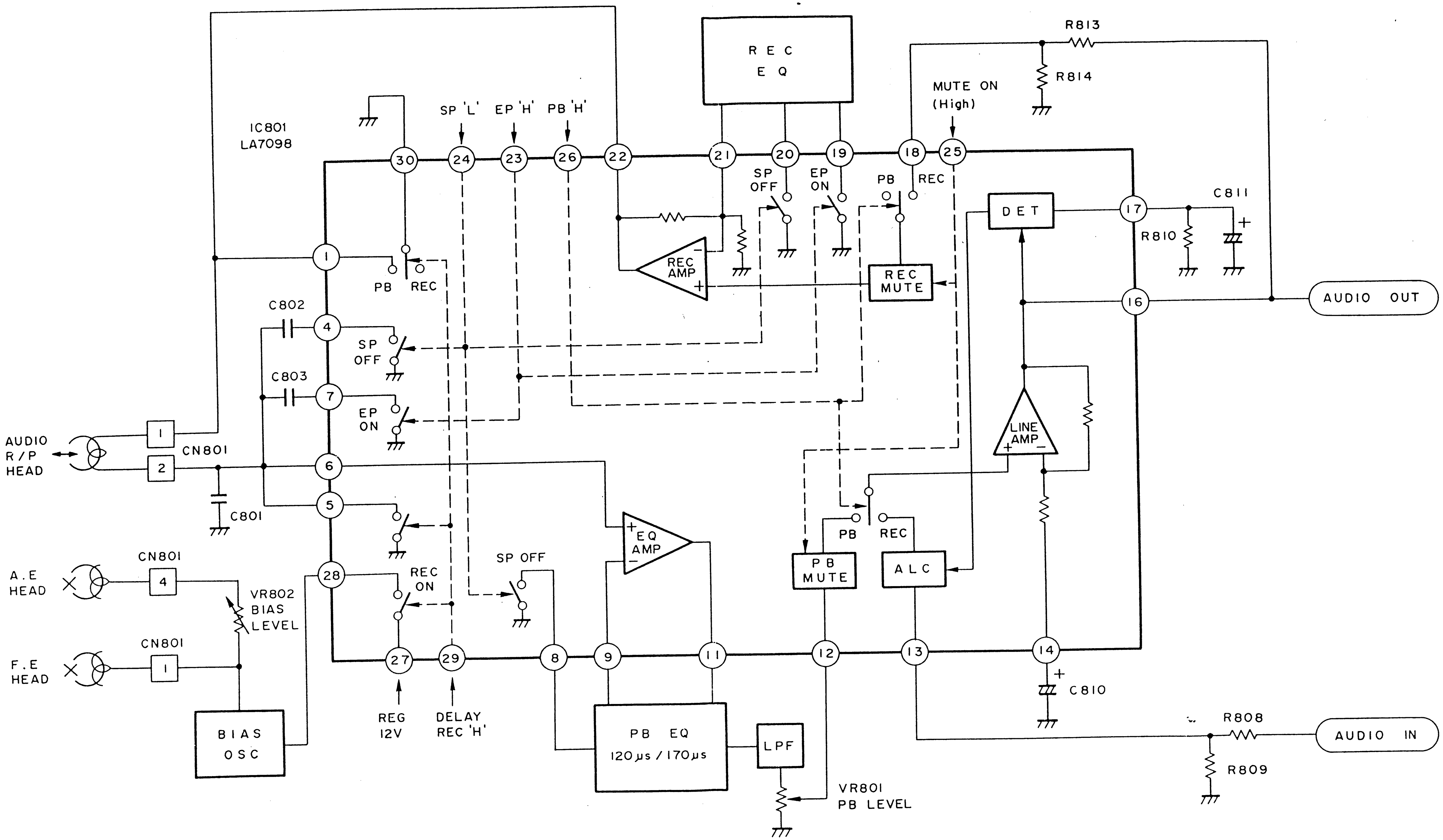
CONNECTOR

601	POWER REG PWB
602	SUB FUNCTION PWB
603	CTL HEAD
604	DRUM MOTOR
605	MECHA JUNCTION

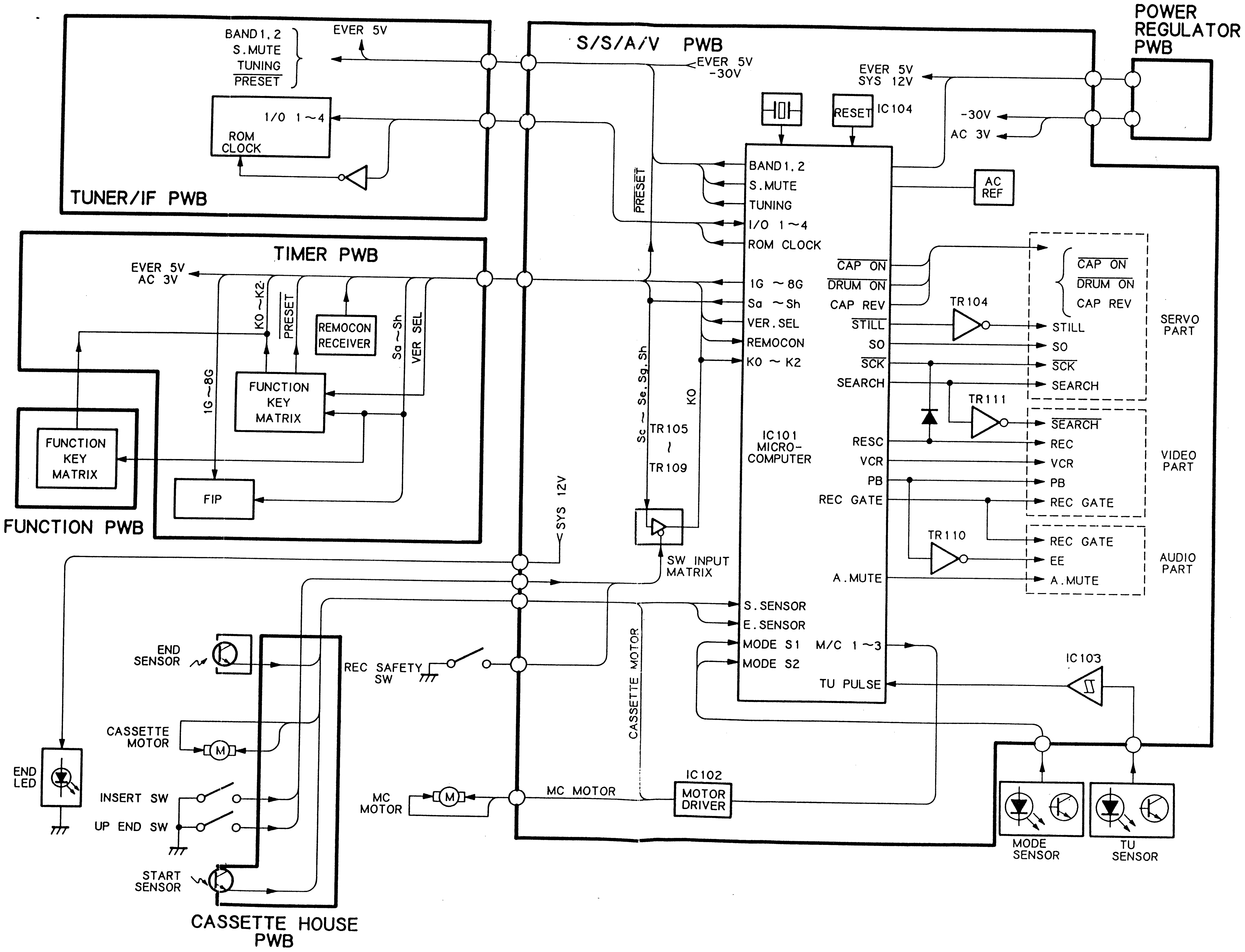
2-3. VIDEO/CHROMA BLOCK DIAGRAM (N9053G/N9055G)


TO JACK TERMINAL
VIDEO IN
TO JACK TERMINAL
VIDEO OUT
PB CHROMA SIGNAL
PB
INSERT VD PULSE
AGC AMP
AGC DET
CLAMP DET
SUB CLAMP
REC PB SWITCH
CHROMA MIX
NOISE CANSEL MIX
LPF
LIMITER
MAIN EMPHASYS
VV & MUTE
SYNC SEPARATOR
NON LINEAR MIX
1/2 fn OFFSET
PB AMP
EE AMP
12dB AMP
CLAMP
NON LINEAR EMPHASYS
WHITE & DARK CLIP
FM MODULATOR
VR205 DEVIATION
VR204 CARRIER SET
VR201 REC Y LEVEL
VR206 EE VIDEO LEVEL
IC 1201 AN3215K
PHASE COMPENSATE
3.1 MHz LPF
VR203 DARK CLIP
VR204 WHITE CLIP
HPF
IC 208 LA 7308
PB-H
DETAIL EMPHASYS
1.4 M HPF
REC Y FM
REC 9V
REC AMP
REC SIGNAL
VIDEO HEAD
A
B
P O R
EQUALIZER
EQUALIZER
RF SW PLS
AGC AMP
AGC DET
DROP OUT DET
HEAD AMP
L
H
IC 501 AN6326N
PRE AMP PWB
RC NETWORK
RC NETWORK
LNCLIM
DIF AMP
DIF AMP
AMP
MAIN DEMODULATOR
LIM
LPF
HPF
1H DELAY LINE
DOC AMP
DO
ENVELOPE DET
SEARCH
DO DET
GATE
AMP
GAIN CONTROL
1H DELAY DEMODULATOR
IC 1202 AN3321K
PICTURE CONTROL
DE-EMPHASYS
RC NETWORK
VR 210 PBYLEVEL
VR213 NOISE CANCEL LEVEL
REC 5V
COMPOSITE SYNC
SEARCH-L COLOR-L
1.4MHz L.P.F
IC1403 TK1506Z
EE-ON
2H COMB FILTER
DAL
ME-SECAM
LPF
RF SW PLS
IC1401 MS593
ME-SECAM -H
BURST UP
MAIN BM
BURST DOWN
ACK
ACC
ACC DET
90° SIFT
VXO
APC
SUB BM
S/P/N
BURST GATE PULSE
VCO
SD DET
1/321
PC
1/4
PLL
1/4
4φ
1/2
1/2
MM
MM
R∫P
ERR DET
B/W
P ON
R ON
PB-I
PB-H
4.43MHz B P F
4.43MHz X'tal
5.06MHz B.P.F
L.P.F
4.43 MHz SUB CARRIER (TO SERVO)
T1401
VR402
REC H
IC1402 LA7025L SECAM DETECTOR
COMPALA-TOR -1
COMPALA-TOR -2
1/2 Fh AMP
DETECTOR
LIMITER
BURST GATE AMP
RECTI-FIER
4.16 MHz FILTER
SYS/SER/AUD/VID PWB

2-4. AUDIO BLOCK DIAGRAM (N9053G)

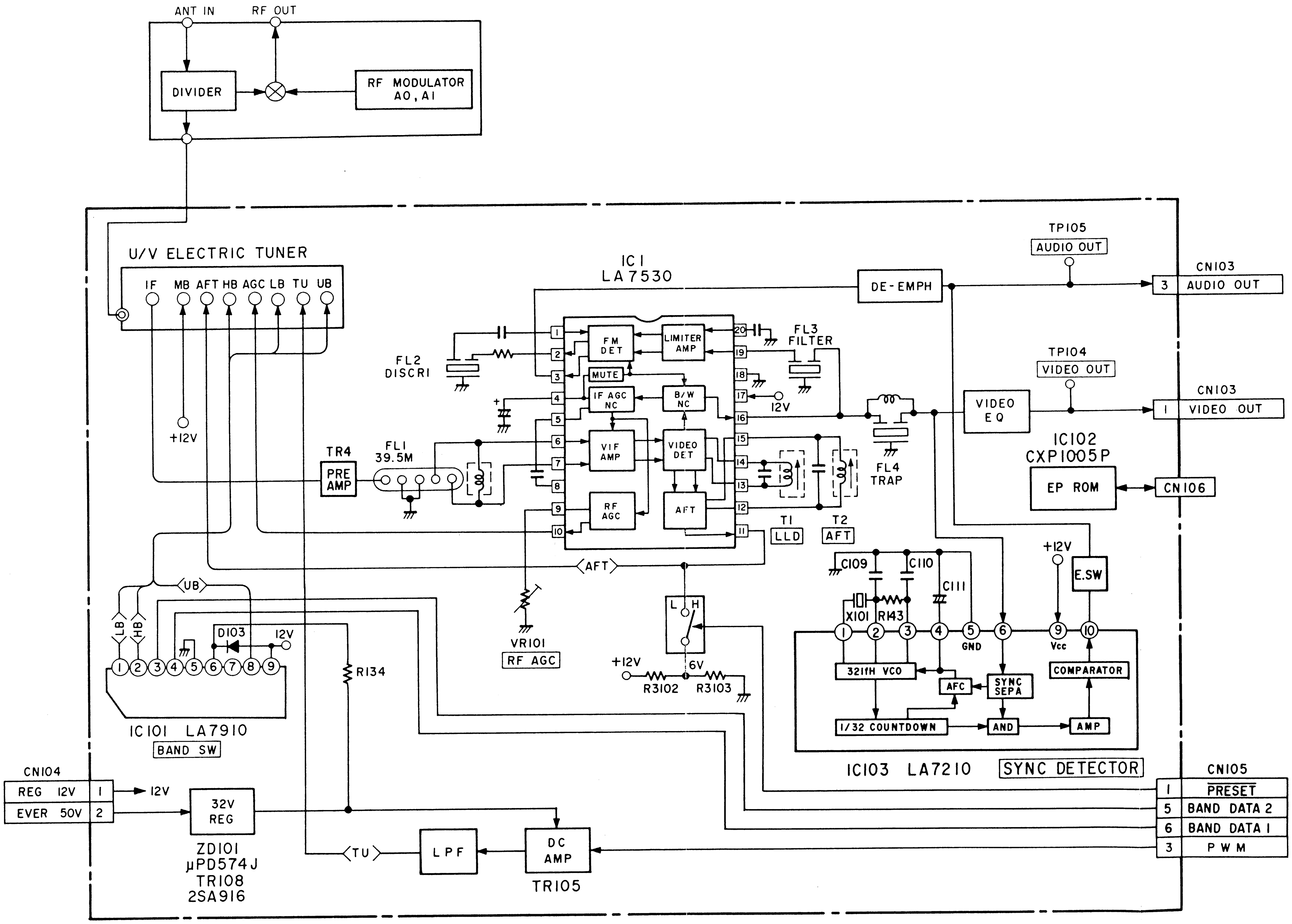

IC801
LA7098
SP 'L'
EP 'H'
PB 'H'
REC
EQ
R813
R814
MUTE ON
(High)
30
24
23
26
22
21
20
19
18
25
SP
OFF
EP
ON
PB
REC
DET
17
C811
R810
REC
AMP
REC
MUTE
16
AUDIO OUT
1
PB
REC
C802
4
SP
OFF
C803
7
EP
ON
LINE
AMP
AUDIO
R/P
HEAD
1
2
CN801
6
C801
5
EQ
AMP
PB
MUTE
ALC
CN801
A.E
HEAD
4
VR802
BIAS
LEVEL
28
REC
ON
SP OFF
CN801
F.E
HEAD
1
27
29
8
9
11
12
13
14
C810
BIAS
OSC
REG
12V
DELAY
REC 'H'
PB EQ
120µs / 170µs
LPF
VR801
PB LEVEL
R808
AUDIO IN
R809

2-5. TIMER FUNCTION/SUB FUNCTION BLOCK DIAGRAM (N9053G)



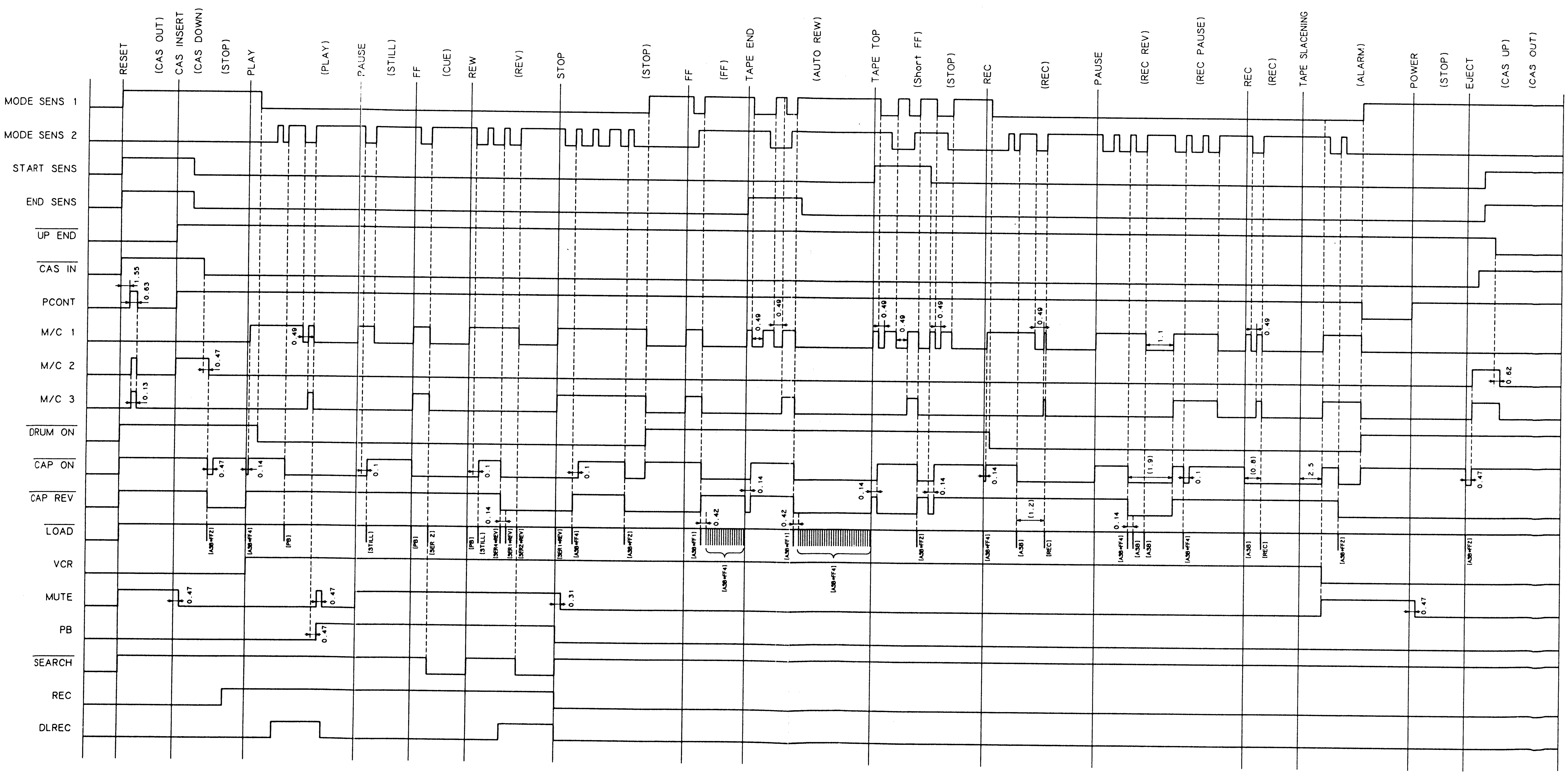
TUNER/IF PWB
BAND1, 2
S.MUTE
TUNING
PRESET
EVER 5V
I/O 1~4
ROM CLOCK
TIMER PWB
EVER 5V
AC 3V
KO~K2
PRESET
REMOCON RECEIVER
Sa~Sh
VER SEL
1G~8G
FUNCTION KEY MATRIX
FIP
FUNCTION PWB
S/S/A/V PWB
EVER 5V
-30V
PRESET
Sc~Se, Sg, Sh
KO
TR105 ~ TR109
SYS 12V
SW INPUT MATRIX
RESET
IC104
IC101 MICRO-COMPUTER
BAND1, 2
S.MUTE
TUNING
I/O 1~4
ROM CLOCK
1G ~ 8G
Sa ~ Sh
VER.SEL
REMOCON
KO ~ K2
CAP ON
DRUM ON
CAP REV
STILL
SO
SCK
SEARCH
RESC
VCR
PB
REC GATE
A.MUTE
S.SENSOR
E.SENSOR
MODE S1
MODE S2
M/C 1~3
TU PULSE
EVER 5V
SYS 12V
-30V
AC 3V
AC REF
POWER REGULATOR PWB
TR104
TR111
TR110
CAP ON
DRUM ON
CAP REV
STILL
SO
SCK
SEARCH
SERVO PART
SEARCH
REC
VCR
PB
REC GATE
VIDEO PART
REC GATE
EE
A.MUTE
AUDIO PART
IC103
CASSETTE MOTOR
IC102 MOTOR DRIVER
MC MOTOR
MC MOTOR
M
REC SAFETY SW
MODE SENSOR
TU SENSOR
END SENSOR
CASSETTE MOTOR
M
INSERT SW
UP END SW
START SENSOR
END LED
CASSETTE HOUSE PWB

2-6. TUNER/IF BLOCK DIAGRAM (N9053G)

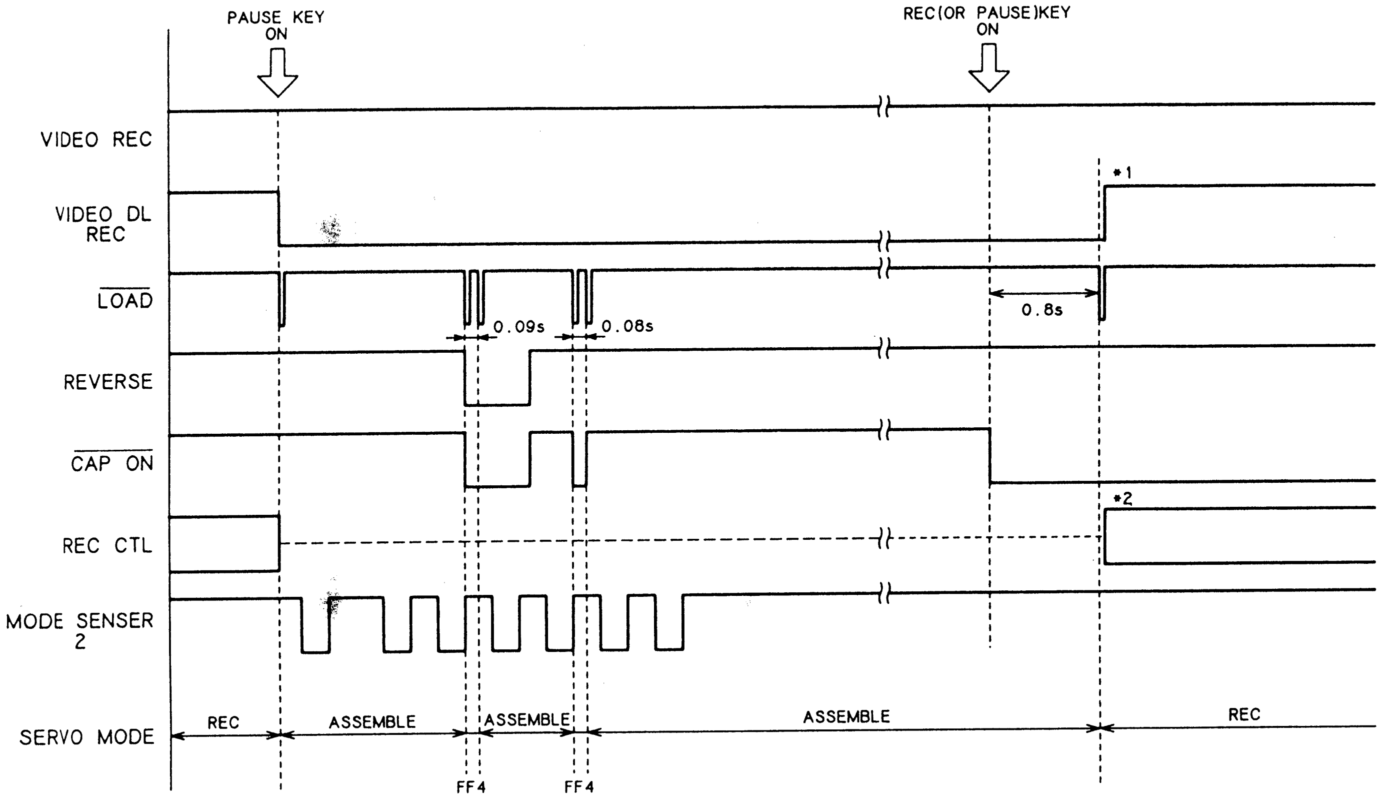

ANT IN
RF OUT
DIVIDER
RF MODULATOR
AO, AI
U/V ELECTRIC TUNER
IF
MB
AFT
HB
AGC
LB
TU
UB
+12V
IC I
LA7530
FM DET
LIMITER AMP
MUTE
IF AGC NC
B/W NC
VIF AMP
VIDEO DET
RF AGC
AFT
FL2
DISCRI
FL3
FILTER
12V
TR4
PRE AMP
FL1
39.5M
T1
LLD
T2
AFT
FL4
TRAP
DE-EMPH
TP105
AUDIO OUT
CN103
3
AUDIO OUT
TP104
VIDEO OUT
VIDEO EQ
CN103
1
VIDEO OUT
IC102
CXP1005P
EP ROM
CN106
AFT
UB
LB
HB
D103
12V
R134
IC101 LA7910
BAND SW
VR101
RF AGC
L
H
+12V
6V
R3102
R3103
C109
C110
C111
X101
R143
GND
Vcc
+12V
E.SW
321fH VCO
AFC
SYNC SEPA
COMPARATOR
1/32 COUNTDOWN
AND
AMP
IC103 LA7210
SYNC DETECTOR
CN105
1
PRESET
5
BAND DATA 2
6
BAND DATA 1
3
P W M
CN104
REG 12V
1
EVER 50V
2
12V
32V REG
ZD101
μPD574J
TR108
2SA916
TU
LPF
DC AMP
TR105

3. TIMING CHART

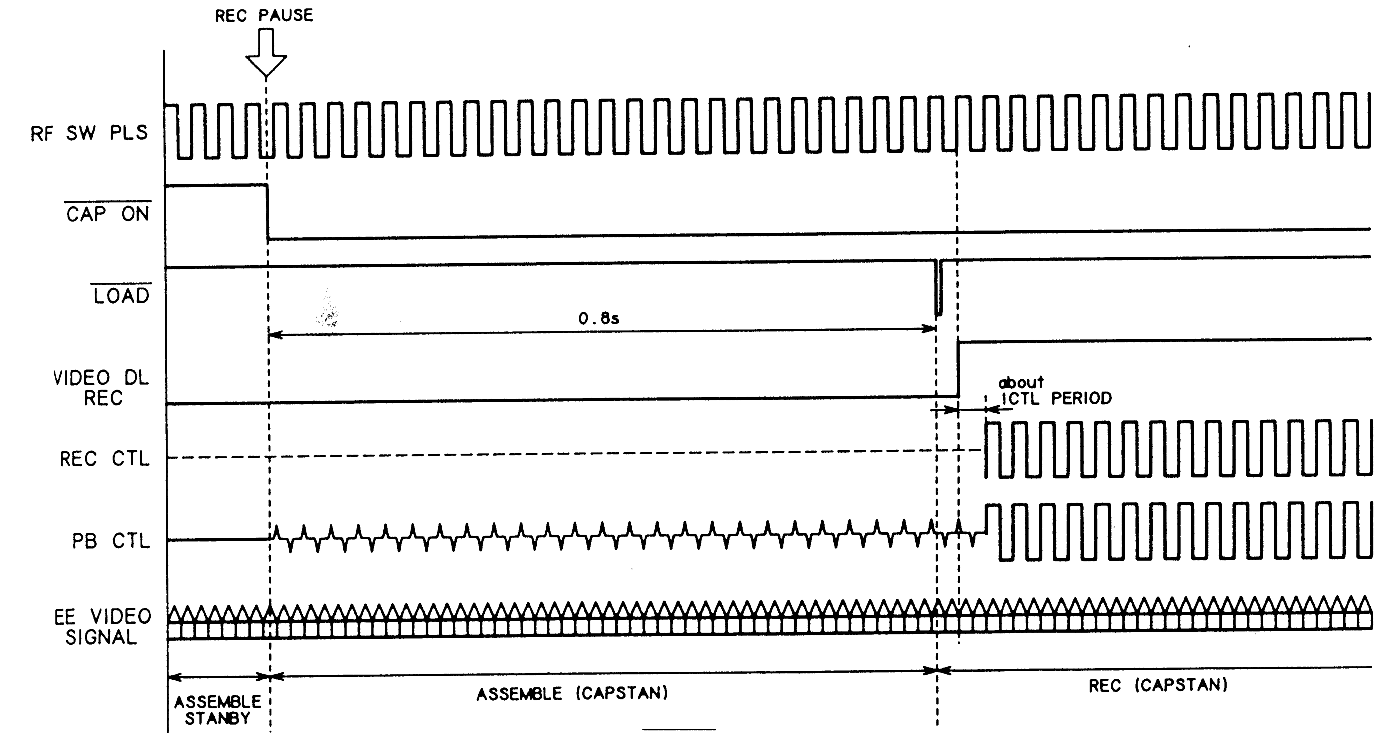
3-1. SYSTEM CONTROL TIMING CHART (N9053G)



3-2. ASSEMBLE RECORD TIMING CHART (N9053G)

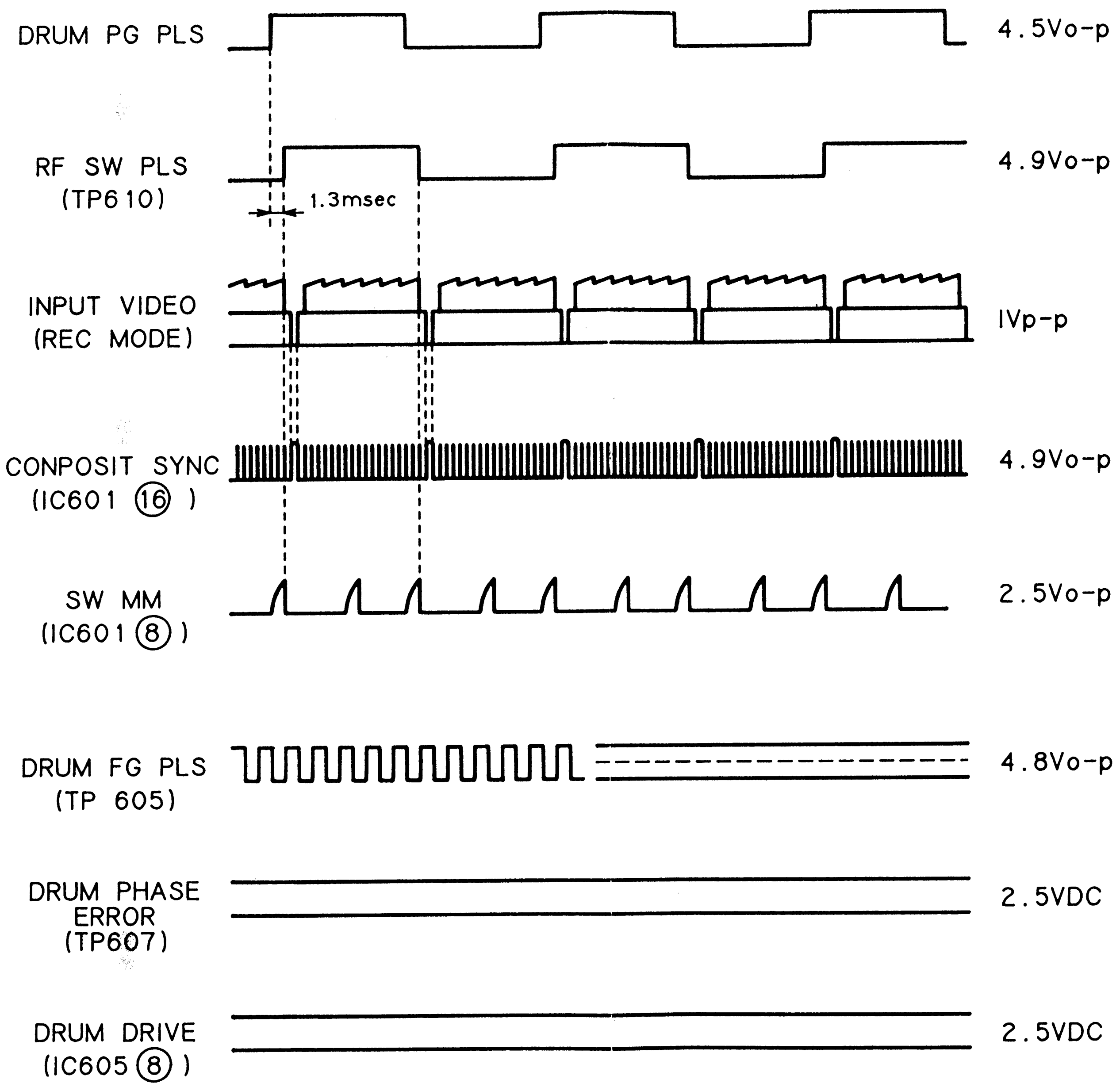

PAUSE KEY ON
REC(OR PAUSE)KEY ON
VIDEO REC
VIDEO DL REC
LOAD
REVERSE
CAP ON
REC CTL
MODE SENSER 2
SERVO MODE
*1
*2
0.09s
0.08s
0.8s
REC
ASSEMBLE
ASSEMBLE
ASSEMBLE
REC
FF4
FF4

*1, *2 See timing chart No. 2 for the *1 and *2 timings.

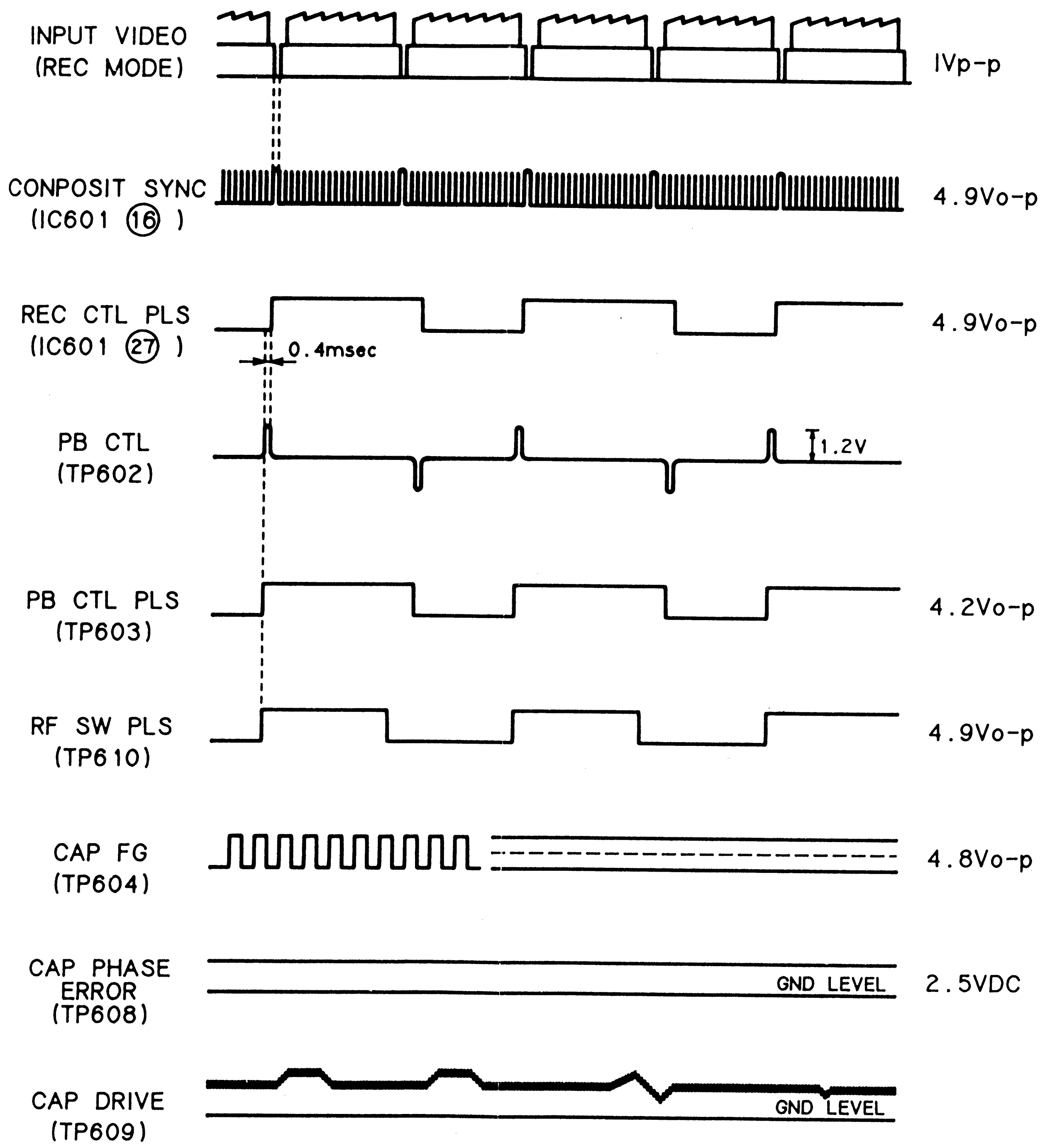

REC PAUSE
RF SW PLS
CAP ON
LOAD
0.8s
VIDEO DL REC
about 1CTL PERIOD
REC CTL
PB CTL
EE VIDEO SIGNAL
ASSEMBLE STANBY
ASSEMBLE (CAPSTAN)
REC (CAPSTAN)

After the REC PULSE is released, CAP ON is set low. Then, the CAPSTAN MOTOR starts rotating and the phase between REC CTL (VSYNC of the VIDEO SIGNAL) and PB CTL is matched.
The connection operation is completed after about 0.8 second (about 24 frames.)
MODE 2 is set high and SERVO enters REC operation state.
The first REC CTL pulse is not recorded. The pulse is recorded from the leading edge of the second CTL pulse.
In addition, DL REC of the VIDEO is output synchronizing with the leading edge of RF SW PLS so that the joint part of VIDEO TRACK can be positioned within the vertical blanking.
DL REC is a control signal for the REC AMP recording current.

3-3. DRUM SERVO TIMING CHART (N9053G)


DRUM PG PLS
4.5Vo-p
RF SW PLS (TP610)
4.9Vo-p
1.3msec
INPUT VIDEO (REC MODE)
IVp-p
CONPOSIT SYNC (IC601 ⑯)
4.9Vo-p
SW MM (IC601 ⑧)
2.5Vo-p
DRUM FG PLS (TP 605)
4.8Vo-p
DRUM PHASE ERROR (TP607)
2.5VDC
DRUM DRIVE (IC605 ⑧)
2.5VDC

3-4. CAPSTAN SERVO TIMING CHART (N9053G)

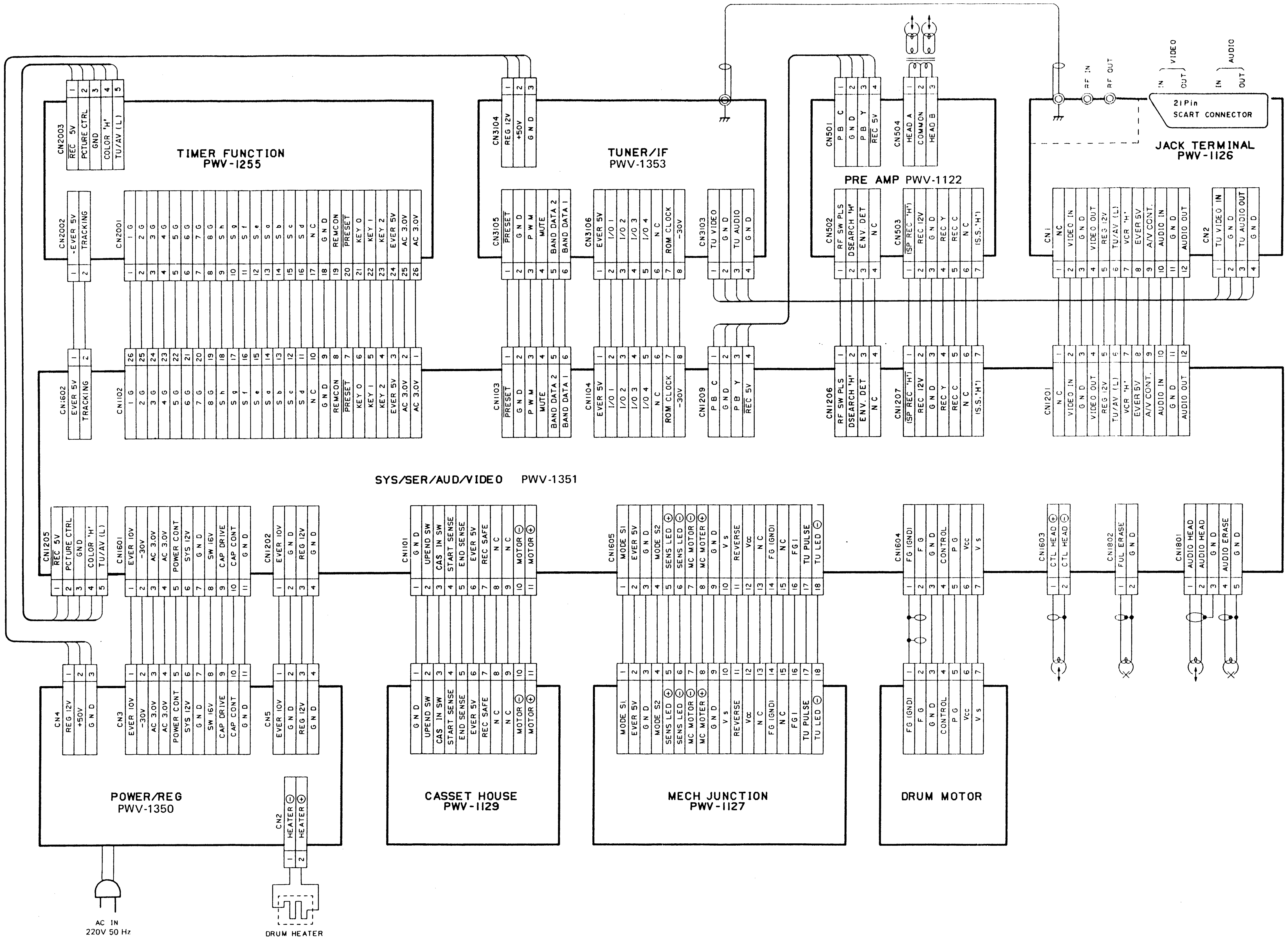

INPUT VIDEO
(REC MODE)
1Vp-p
CONPOSIT SYNC
(IC601 ⑯)
4.9Vo-p
REC CTL PLS
(IC601 ㉗)
0.4msec
4.9Vo-p
PB CTL
(TP602)
1.2V
PB CTL PLS
(TP603)
4.2Vo-p
RF SW PLS
(TP610)
4.9Vo-p
CAP FG
(TP604)
4.8Vo-p
CAP PHASE
ERROR
(TP608)
GND LEVEL
2.5VDC
CAP DRIVE
(TP609)
GND LEVEL

3-5. PARAMETERS (N9053G)

MODE	PARAMETER	RF SW PLS Frequency (Hz)	DRUM FG Frequency (Hz)	CAPSTAN FG Frequency (Hz)	CAPSTAN DRIVE Voltage (Volt. DC)
SP	REC NORMAL P.B.	24.99	499.82	504.6	4.3
	CUE	25.73	514.64	3637	9.3
	REVIEW	24.07	481.34	3401	8.9
	STILL	24.87	497.43	0 (Motor stop)	0

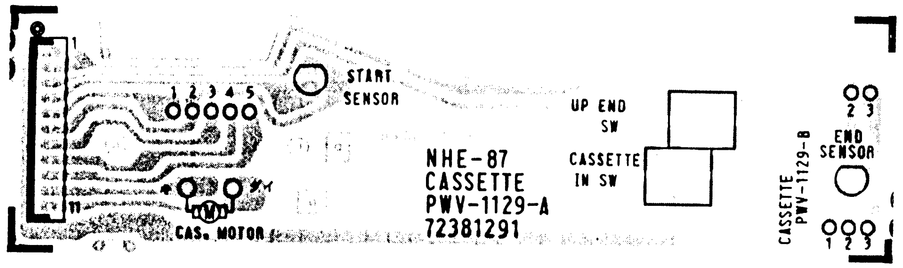
4. SCHEMATIC/CIRCUIT BOARD DIAGRAMS

4-1. FRAME WIRING (N9053G)

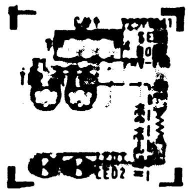

TIMER FUNCTION PWV-1255
CN2003 REC 5V, PCTURE CTRL, GND, COLOR 'H', TU/AV (L)
CN2002 -EVER 5V, TRACKING
CN2001 1G, 2G, 3G, 4G, 5G, 6G, 7G, 8G, S h, S g, S f, S e, S a, S b, S c, S d, NC, GND, REMCON, PRESET, KEY 0, KEY 1, KEY 2, EVER 5V, AC 3.0V, AC 3.0V
TUNER/IF PWV-1353
CN3104 REG 12V, +50V, GND
CN3105 PRESET, GND, PWM, MUTE, BAND DATA 2, BAND DATA 1
CN3106 EVER 5V, I/O 1, I/O 2, I/O 3, I/O 4, NC, ROM CLOCK, -30V
CN3103 TU VIDEO, GND, TU AUDIO, GND
PRE AMP PWV-1122
CN501 PB C, GND, PB Y, REC 5V
CN504 HEAD A, COMMON, HEAD B
CN502 RF SW PLS, DSEARCH 'H', ENV DET, NC
CN503 (SP REC 'H'), REC 12V, GND, REC Y, REC C, NC, (S.S.'H')
JACK TERMINAL PWV-1126
RF IN
RF OUT
IN, OUT VIDEO
IN, OUT AUDIO
21Pin SCART CONNECTOR
CN1 NC, VIDEO IN, GND, VIDEO OUT, REG 12V, TU/AV (L), VCR 'H', EVER 5V, A/V CONT., AUDIO IN, GND, AUDIO OUT
CN2 TU VIDEO IN, GND, TU AUDIO OUT, GND
SYS/SER/AUD/VIDEO PWV-1351
CN1602 EVER 5V, TRACKING
CN1102 1G, 2G, 3G, 4G, 5G, 6G, 7G, 8G, S h, S g, S f, S e, S a, S b, S c, S d, NC, GND, REMCON, PRESET, KEY 0, KEY 1, KEY 2, EVER 5V, AC 3.0V, AC 3.0V
CN1103 PRESET, GND, PWM, MUTE, BAND DATA 2, BAND DATA 1
CN1104 EVER 5V, I/O 1, I/O 2, I/O 3, I/O 4, NC, ROM CLOCK, -30V
CN1209 PB C, GND, PB Y, REC 5V
CN1206 RF SW PLS, DSEARCH 'H', ENV. DET, NC
CN1207 (SP REC 'H'), REC 12V, GND, REC Y, REC C, NC, (S.S.'H')
CN1201 NC, VIDEO IN, GND, VIDEO OUT, REG 12V, TU/AV (L), VCR 'H', EVER 5V, A/V CONT., AUDIO IN, GND, AUDIO OUT
CN1205 REC 5V, PCTURE CTRL, GND, COLOR 'H', TU/AV (L)
CN1601 EVER 10V, -30V, AC 3.0V, AC 3.0V, POWER CONT, SYS 12V, GND, SW 16V, CAP DRIVE, CAP CONT, GND
CN1202 EVER 10V, GND, REG 12V, GND
CN1101 GND, UPEND SW, CAS IN SW, START SENSE, END SENSE, EVER 5V, REC SAFE, NC, NC, MOTOR ⊖, MOTOR ⊕
CN1605 MODE S1, EVER 5V, GND, MODE S2, SENS LED ⊕, SENS LED ⊖, SENS LED ⊖, MC MOTOR ⊕, MC MOTER ⊖, GND, Vs, REVERSE, Vcc, NC, FG (GND), NC, FG1, TU PULSE, TU LED ⊖
CN1604 FG (GND), FG, GND, CONTROL, PG, Vcc, Vs
CN1603 CTL HEAD ⊕, CTL HEAD ⊖
CN1802 FUL ERASE, GND
CN1801 AUDIO HEAD, AUDIO HEAD, GND, AUDIO ERASE, GND
POWER/REG PWV-1350
CN4 REG 12V, +50V, GND
CN3 EVER 10V, -30V, AC 3.0V, AC 3.0V, POWER CONT, SYS 12V, GND, SW 16V, CAP DRIVE, CAP CONT, GND
CN5 EVER 10V, GND, REG 12V, GND
CN2 HEATER ⊖, HEATER ⊕
AC IN 220V 50 Hz
DRUM HEATER
CASSET HOUSE PWV-1129
GND, UPEND SW, CAS IN SW, START SENSE, END SENSE, EVER 5V, REC SAFE, NC, NC, MOTOR ⊖, MOTOR ⊕
MECH JUNCTION PWV-1127
MODE S1, EVER 5V, GND, MODE S2, SENS LED ⊕, SENS LED ⊖, SENS LED ⊖, MC MOTER ⊕, MC MOTER ⊖, GND, Vs, REVERSE, Vcc, NC, FG (GND), NC, FG1, TU PULSE, TU LED ⊖
DRUM MOTOR
FG (GND), FG, GND, CONTROL, PG, Vcc, Vs

4-2. OTHER MINI-CIRCUIT BOARDS (N9053G/N9055G)

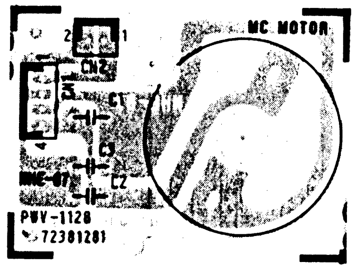
- CASSETTE CIRCUIT BOARD


START SENSOR
UP END SW
CASSETTE IN SW
NHE-87
CASSETTE
PWV-1129-A
72381291
CAS. MOTOR
END SENSOR
CASSETTE
PWV-1129-B

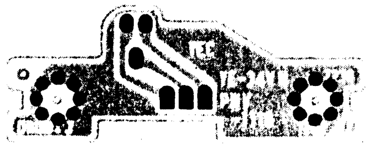
- MODE SENSOR CIRCUIT BOARD



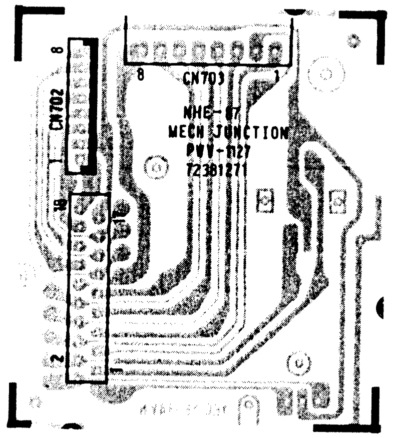
- MC CONTROL CIRCUIT BOARD


MC MOTOR
CN2
NHE-87
PWV-1128
72381281

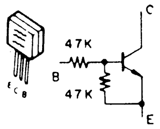
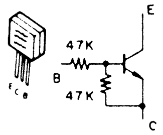
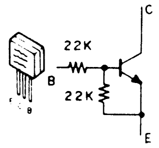
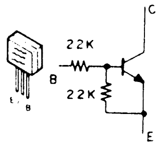
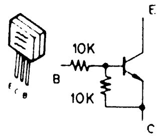
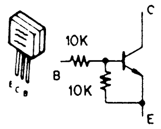
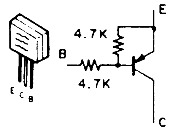
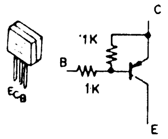
- DRUM JUNCTION CIRCUIT BOARD



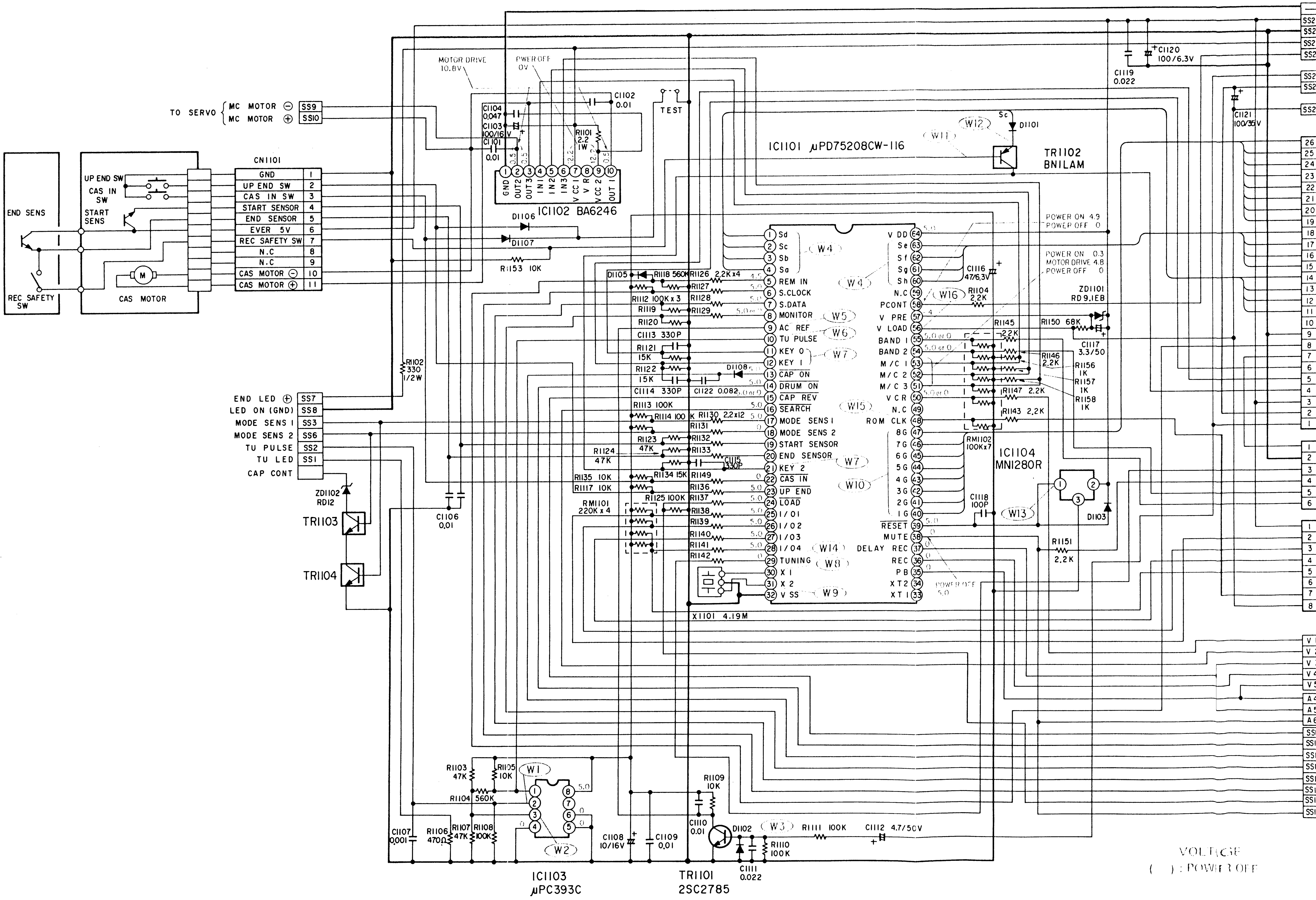
- MECHA JUNCTION CIRCUIT BOARD

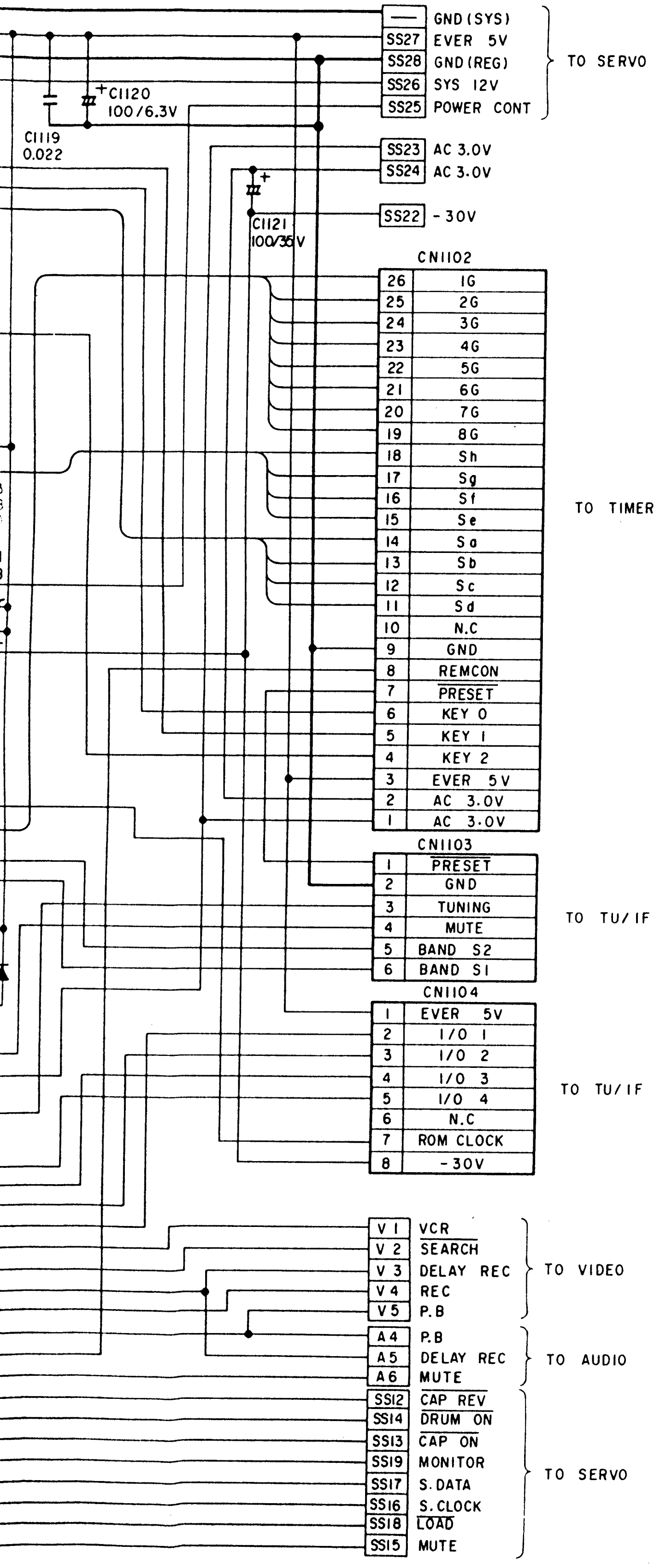

CN703
CN702
NHE-87
MECHA JUNCTION
PWV-1127
72381271

DIGITAL TRANSISTOR INFORMATION

SYMBOL	FIGURE
BA1L4M	
BN1L4M	
BA1F4M	
BN1F4M	
BN1A4M AN1A4M	
BA1A4M AA1A4M	
UN4122	
BB1A3Z	

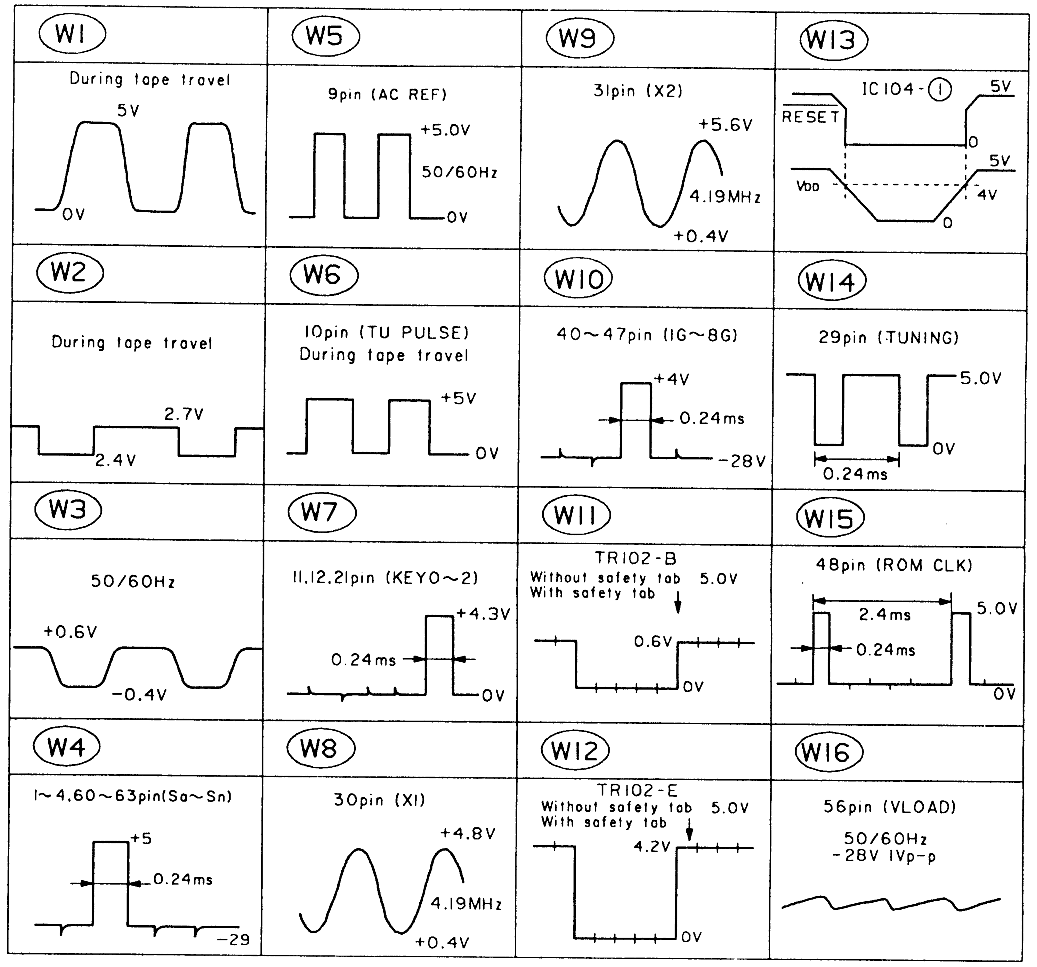
4-3. SYSCON SCHEMATIC DIAGRAM (N9053G)


TO SERVO
MC MOTOR ⊖ SS9
MC MOTOR ⊕ SS10
END SENS
REC SAFETY SW
UP END SW
CAS IN SW
START SENS
CAS MOTOR
CN1101
1 GND
2 UP END SW
3 CAS IN SW
4 START SENSOR
5 END SENSOR
6 EVER 5V
7 REC SAFETY SW
8 N.C
9 N.C
10 CAS MOTOR ⊖
11 CAS MOTOR ⊕
R1102 330 1/2W
END LED ⊕ SS7
LED ON (GND) SS8
MODE SENS 1 SS3
MODE SENS 2 SS6
TU PULSE SS2
TU LED SS1
CAP CONT
ZD1102 RD12
TR1103
TR1104
C1106 0.01
MOTOR DRIVE 10.8V
PWER OFF 0V
C1104 0.047
C1103 100/16V
C1101 0.01
C1102 0.01
R1101 2.2 1W
IC1102 BA6246
GND OUT2 OUT3 IN1 IN2 IN3 VCC1 VR VCC2 OUT1
D1106
D1107
R1153 10K
TEST
IC1101 μPD75208CW-116
1 Sd
2 Sc
3 Sb
4 Sa
5 REM IN
6 S.CLOCK
7 S.DATA
8 MONITOR
9 AC REF
10 TU PULSE
11 KEY 0
12 KEY 1
13 CAP ON
14 DRUM ON
15 CAP REV
16 SEARCH
17 MODE SENS 1
18 MODE SENS 2
19 START SENSOR
20 END SENSOR
21 KEY 2
22 CAS IN
23 UP END
24 LOAD
25 I/01
26 I/02
27 I/03
28 I/04
29 TUNING
30 X1
31 X2
32 VSS
64 VDD
63 Se
62 Sf
61 Sg
60 Sh
59 N.C
58 PCONT
57 V PRE
56 V LOAD
55 BAND 1
54 BAND 2
53 M/C 1
52 M/C 2
51 M/C 3
50 VCR
49 N.C
48 ROM CLK
47 8G
46 7G
45 6G
44 5G
43 4G
42 3G
41 2G
40 1G
39 RESET
38 MUTE
37 DELAY REC
36 REC
35 PB
34 XT2
33 XT1
X1101 4.19M
W1 W2 W3 W4 W5 W6 W7 W8 W9 W10 W11 W12 W13 W14 W15 W16
D1105
R1118 560K
R1126 2.2K x4
R1127
R1112 100K x 3
R1128
R1119
R1129
R1120
C1113 330P
R1121 15K
R1122 15K
D1108
C1114 330P
C1122 0.082
R1113 100K
R1114 100
R1130 2.2Kx12
R1131
R1123 47K
R1132
R1133
R1124 47K
C1115 330P
R1135 10K
R1134 15K
R1149
R1117 10K
R1136
R1125 100K
R1137
RM1101 220K x 4
R1138
R1139
R1140
R1141
R1142
C1116 47/6.3V
R1104 2.2K
R1145 2.2K
R1146 2.2K
R1156 1K
R1157 1K
R1158 1K
R1147 2.2K
R1143 2.2K
RM1102 100Kx7
IC1104 MN1280R
C1118 100P
D1103
R1151 2.2K
POWER OFF 5.0
Sc
D1101
TR1102 BN1LAM
POWER ON 4.9
POWER OFF 0
POWER ON 0.3
MOTOR DRIVE 4.8
POWER OFF 0
ZD1101 RD9.1EB
R1150 68K
C1117 3.3/50
C1119 0.022
C1120 100/6.3V
C1121 100/35V
R1103 47K
R1105 10K
R1104 560K
C1107 0.001
R1106 470Ω
R1107 47K
R1108 100K
IC1103 μPC393C
C1108 10/16V
C1109 0.01
R1109 10K
C1110 0.01
TR1101 2SC2785
D1102
R1111 100K
C1112 4.7/50V
R1110 100K
C1111 0.022
VOLTAGE
( ) : POWER OFF

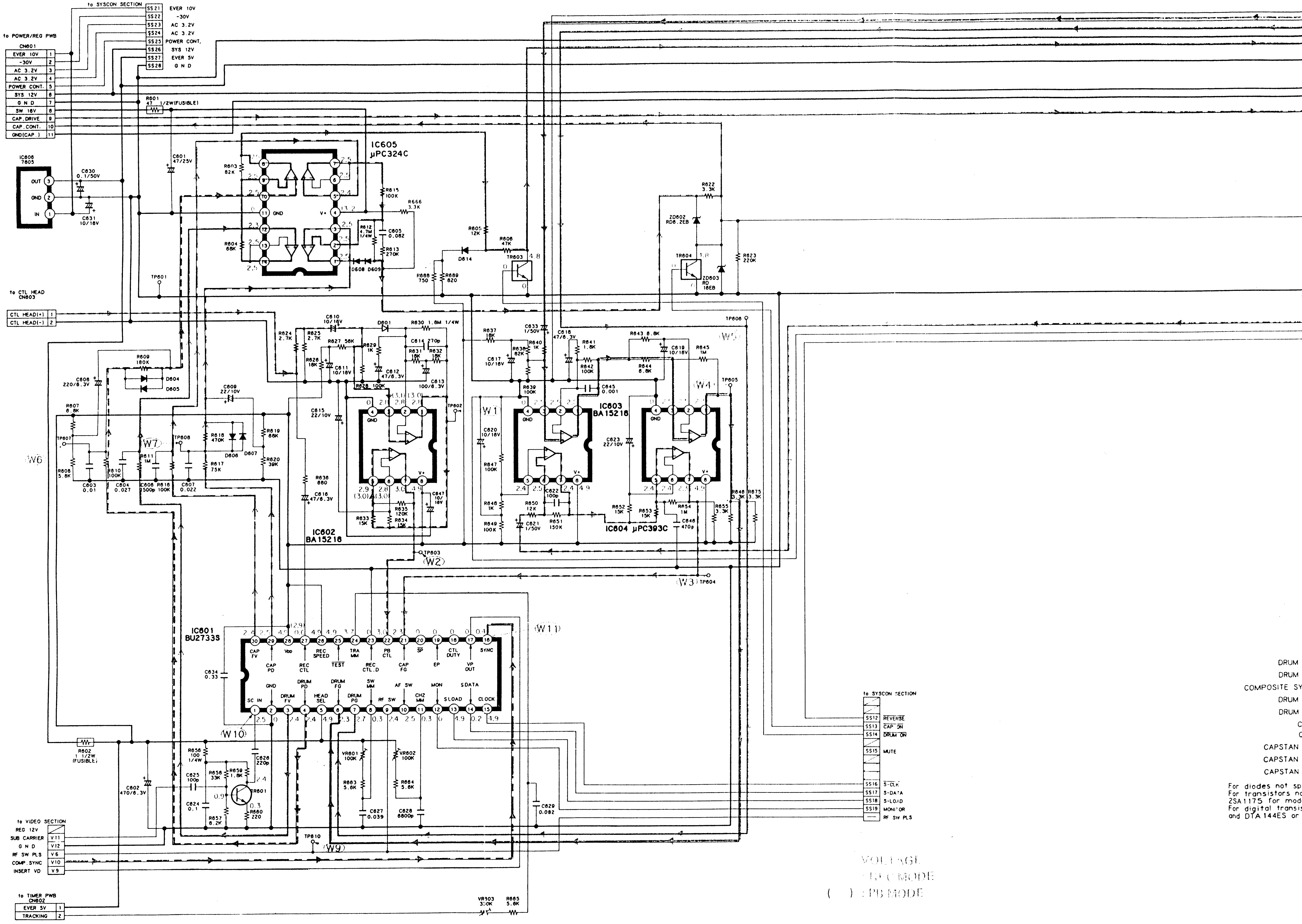

GND (SYS)
SS27 EVER 5V
SS28 GND (REG)
SS26 SYS 12V
SS25 POWER CONT
TO SERVO
C1120 100/6.3V
C1119 0.022
SS23 AC 3.0V
SS24 AC 3.0V
SS22 -30V
C1121 100/35V
CN1102
26 1G
25 2G
24 3G
23 4G
22 5G
21 6G
20 7G
19 8G
18 Sh
17 Sg
16 Sf
15 Se
14 Sa
13 Sb
12 Sc
11 Sd
10 N.C
9 GND
8 REMCON
7 PRESET
6 KEY 0
5 KEY 1
4 KEY 2
3 EVER 5V
2 AC 3.0V
1 AC 3.0V
TO TIMER
CN1103
1 PRESET
2 GND
3 TUNING
4 MUTE
5 BAND S2
6 BAND S1
TO TU/IF
CN1104
1 EVER 5V
2 I/O 1
3 I/O 2
4 I/O 3
5 I/O 4
6 N.C
7 ROM CLOCK
8 -30V
TO TU/IF
V1 VCR
V2 SEARCH
V3 DELAY REC
V4 REC
V5 P.B
TO VIDEO
A4 P.B
A5 DELAY REC
A6 MUTE
TO AUDIO
SS12 CAP REV
SS14 DRUM ON
SS13 CAP ON
SS19 MONITOR
SS17 S.DATA
SS16 S.CLOCK
SS18 LOAD
SS15 MUTE
TO SERVO

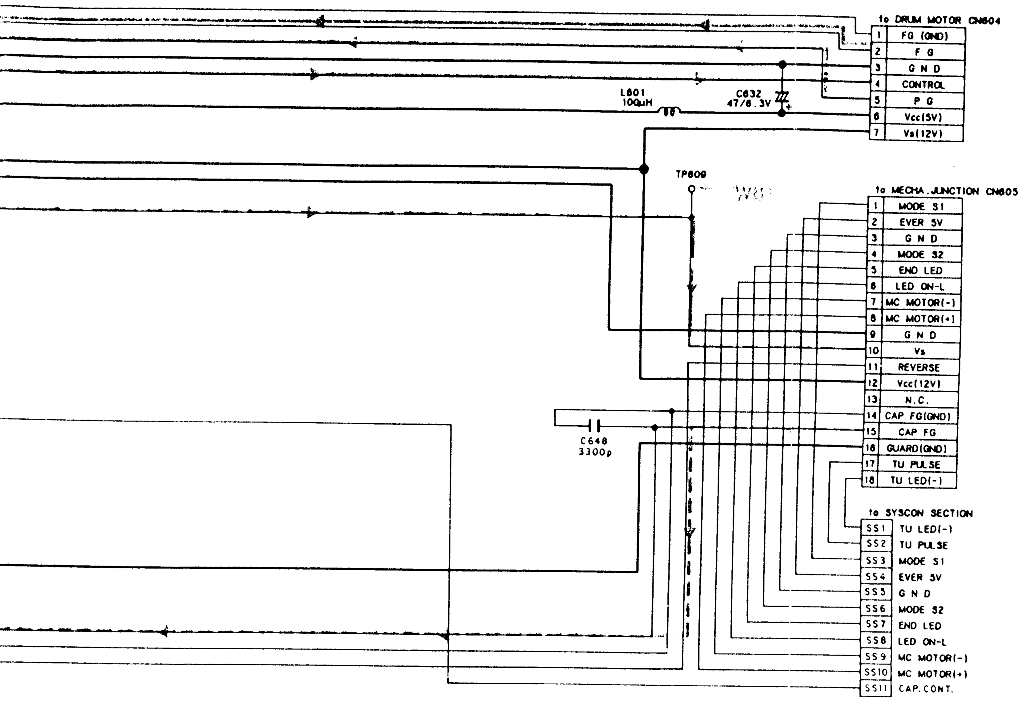
VOLTAGE
( ): POWER OFF

SYSCON WAVEFORMS


W1
During tape travel
5V
0V
W5
9pin (AC REF)
+5.0V
50/60Hz
0V
W9
31pin (X2)
+5.6V
4.19MHz
+0.4V
W13
IC104-①
RESET
5V
0
5V
VDD
4V
0
W2
During tape travel
2.7V
2.4V
W6
10pin (TU PULSE)
During tape travel
+5V
0V
W10
40~47pin (1G~8G)
+4V
0.24ms
-28V
W14
29pin (TUNING)
5.0V
0V
0.24ms
W3
50/60Hz
+0.6V
-0.4V
W7
11,12,21pin (KEY0~2)
+4.3V
0.24ms
0V
W11
TR102-B
Without safety tab 5.0V
With safety tab
0.6V
0V
W15
48pin (ROM CLK)
2.4ms
5.0V
0.24ms
0V
W4
1~4,60~63pin(Sa~Sn)
+5
0.24ms
-29
W8
30pin (X1)
+4.8V
4.19MHz
+0.4V
W12
TR102-E
Without safety tab 5.0V
With safety tab
4.2V
0V
W16
56pin (VLOAD)
50/60Hz
-28V 1Vp-p

4-4. SERVO SCHEMATIC DIAGRAM (N9053G)


to SYSCON SECTION
SS21 EVER 10V
SS22 -30V
SS23 AC 3.2V
SS24 AC 3.2V
SS25 POWER CONT.
SS26 SYS 12V
SS27 EVER 5V
SS28 G N D
to POWER/REG PWB
CN601
EVER 10V 1
-30V 2
AC 3.2V 3
AC 3.2V 4
POWER CONT. 5
SYS 12V 6
G N D 7
SW 18V 8
CAP. DRIVE 9
CAP. CONT. 10
GND(CAP.) 11
R601 47 1/2W(FUSIBLE)
IC606 7805
OUT GND IN
C630 0.1/50V
C631 10/16V
C601 47/25V
IC605 μPC324C
R603 82K
R604 68K
R615 100K
R666 3.3K
R612 4.7M 1/4W
C605 0.082
R613 270K
D608 D609
GND V+
TP601
to CTL HEAD CN603
CTL HEAD(+) 1
CTL HEAD(-) 2
R605 12K
R606 47K
D614
TR603
R688 750
R689 820
R622 3.3K
ZD602 RD8.2EB
TR604
ZD603 RD 18EB
R623 220K
TP606
C610 10/16V
D601
R630 1.8M 1/4W
R624 2.7K
R625 2.7K
R627 56K
R629 1K
C614 270p
R631 18K
R632 18K
R626 18K
C611 10/16V
C612 47/6.3V
R628 100K
C613 100/6.3V
R609 180K
D604
D605
C606 220/6.3V
C609 22/10V
C615 22/10V
TP602
R607 6.8K
TP607
W7
TP608
R618 470K
D606
D607
R619 68K
R611 1M
R617 75K
R620 39K
W6
R608 5.6K
C603 0.01
R610 100K
C604 0.027
C608 2500p
R616 100K
C607 0.022
R636 680
C616 47/6.3V
R633 15K
R635 120K
R634 15K
C647 10/16V
IC602 BA15218
TP603
W2
R637 18K
C633 1/50V
C618 47/6.3V
R638 82K
R640 1K
R641 1.8K
R643 6.8K
C619 10/16V
R645 1M
C617 10/16V
R642 100K
R644 6.8K
W5
W4
TP605
R639 100K
C645 0.001
IC603 BA15218
W1
C620 10/16V
C623 22/10V
R647 100K
R648 1K
R649 100K
R650 12K
C622 100p
C621 1/50V
R651 150K
R652 15K
R653 15K
R654 1M
C648 470p
R655 3.3K
R646 3.3K
R675 3.3K
IC604 μPC393C
W3
TP604
IC601 BU2733S
CAP FV
CAP PD
VDD
REC SPEED
REC CTL
TEST
TRA MM
REC CTL.D
PB CTL
CAP FG
SP
EP
CTL DUTY
VP OUT
SYNC
GND
SC IN
DRUM FV
DRUM PD
HEAD SEL
DRUM FG
DRUM PG
SW MM
RF SW
AF SW
CH2 MM
MON
SLOAD
SDATA
CLOCK
W11
W10
C634 0.33
R602 1 1/2W (FUSIBLE)
C602 470/6.3V
R656 100 1/4W
C625 100p
R658 33K
R659 1.8K
C626 220p
TR601
C624 0.1
R657 8.2K
R660 220
VR601 100K
R663 5.6K
C627 0.039
VR602 100K
R664 5.6K
C628 6800p
C629 0.082
TP610
W9
to VIDEO SECTION
REG 12V
SUB CARRIER V11
G N D V12
RF SW PLS V6
COMP. SYNC V10
INSERT VD V9
to TIMER PWB CN602
EVER 5V 1
TRACKING 2
VR503 3.3K
R665 5.6K
to SYSCON SECTION
SS12 REVERSE
SS13 CAP ON
SS14 DRUM ON
SS15 MUTE
SS16 S-CLK
SS17 S-DATA
SS18 S-LOAD
SS19 MONITOR
RF SW PLS
DRUM
DRUM
COMPOSITE SY
DRUM
DRUM
CAPSTAN
CAPSTAN
CAPSTAN
For diodes not sp
For transistors no
2SA1175 for mod
For digital transis
and DTA144ES or
VOLTAGE
REC MODE
( ) : PB MODE


to DRUM MOTOR CN604
1 FG (GND)
2 F G
3 G N D
4 CONTROL
5 P G
6 Vcc(5V)
7 Vs(12V)
L601 100μH
C632 47/6.3V
TP609
W8
to MECHA.JUNCTION CN605
1 MODE S1
2 EVER 5V
3 G N D
4 MODE S2
5 END LED
6 LED ON-L
7 MC MOTOR(-)
8 MC MOTOR(+)
9 G N D
10 Vs
11 REVERSE
12 Vcc(12V)
13 N.C.
14 CAP FG(GND)
15 CAP FG
16 GUARD(GND)
17 TU PULSE
18 TU LED(-)
C648 3300p
to SYSCON SECTION
SS1 TU LED(-)
SS2 TU PULSE
SS3 MODE S1
SS4 EVER 5V
SS5 G N D
SS6 MODE S2
SS7 END LED
SS8 LED ON-L
SS9 MC MOTOR(-)
SS10 MC MOTOR(+)
SS11 CAP.CONT.

DRUM SERVO SIGNAL
DRUM PG ········ PHASE COMPARISON SIGNAL
DRUM FG ———— SPEED COMPARISON SIGNAL
COMPOSITE SYNC —— – —— PHASE BASE SIGNAL (REC)
DRUM PD – – – – – – PHASE ERROR SIGNAL
DRUM FV ———— SPEED ERROR SIGNAL
CAPSTAN SERVO SIGNAL
CTL – – – – – – PHASE COMPARISON SIGNAL (PB)
CAPSTAN FG – – – – – – SPEED COMPARISON SIGNAL
CAPSTAN PD —— – —— PHASE ERROR SIGNAL
CAPSTAN FV —— – —— SPEED ERROR SIGNAL

TP LIST

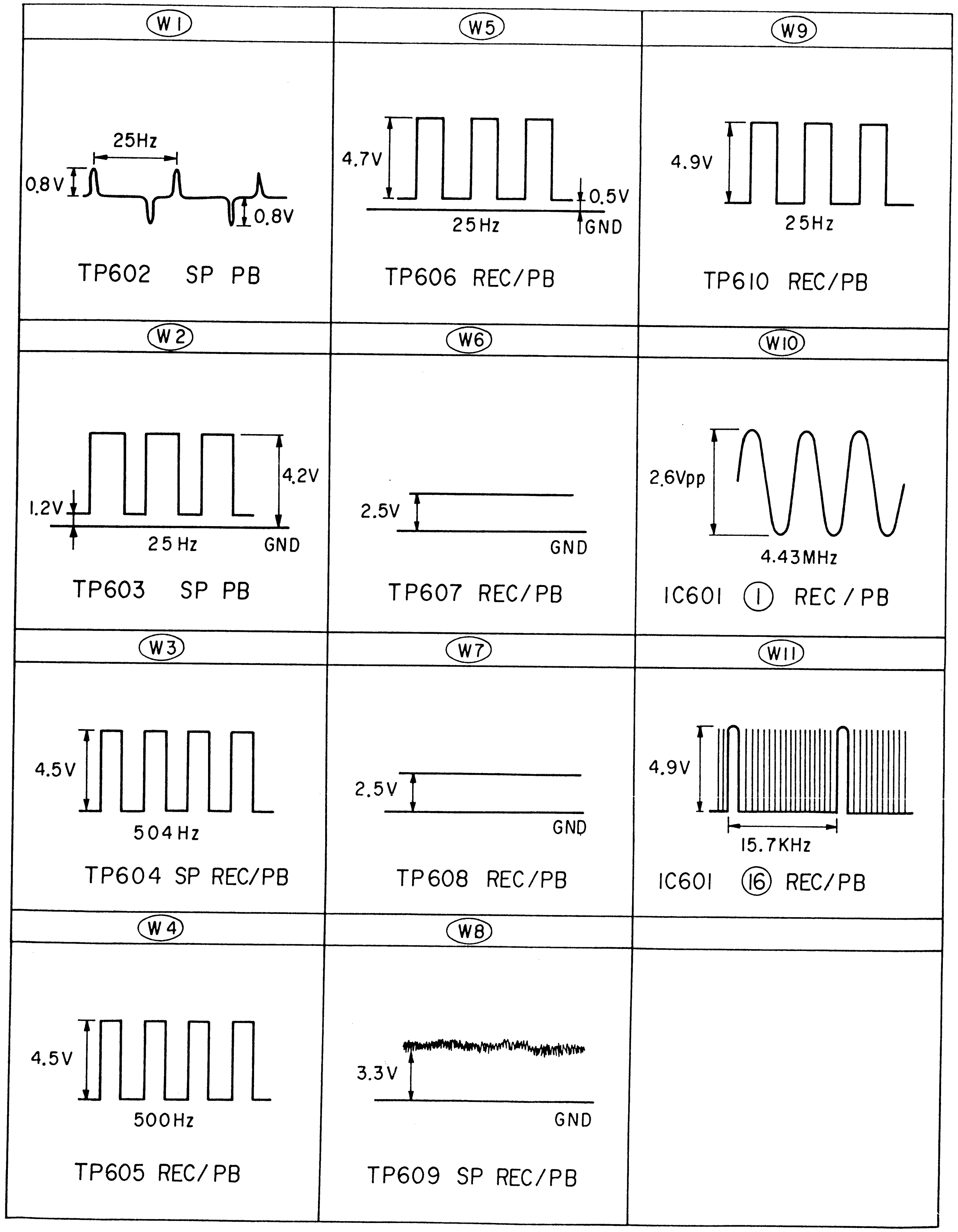
NO.	ITEM
601	G N D
602	PB CTL(LIN.)
603	PB CTL PLS
604	CAP FG PLS
605	DRUM FG PLS
606	DRUM PG PLS
607	DRUM PHASE ERROR
608	CAP.PHASE ERROR
609	CAP.DRIVE VOLTAGE
610	RF SW PLS

VR LIST

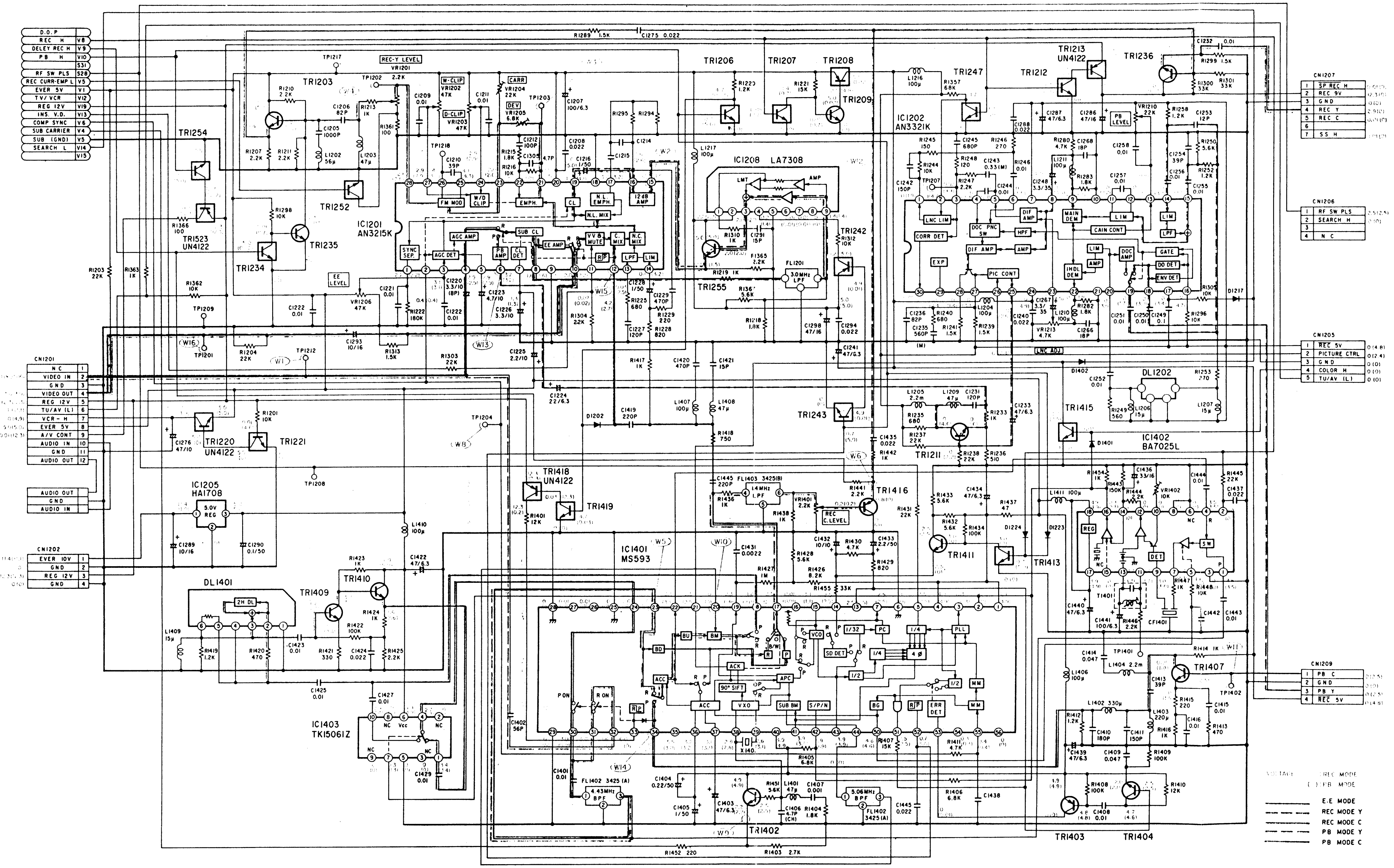
NO.	ITEM
601	PG DL
602	INS VD PHASE
603	TRACKING SUB

For diodes not specified use ISSI33 or IS2473.
For transistors not specified use 2SC2785 for model NPN and 2SA1175 for model PNP.
For digital transistors not specified use DTC144ES or equivalent for model NPN and DTA144ES or equivalent for model PNP.

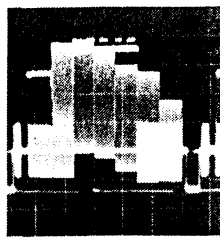
SERVO WAVEFORMS


W1
25Hz
0.8V
0.8V
TP602 SP PB
W5
4.7V
0.5V
GND
25Hz
TP606 REC/PB
W9
4.9V
25Hz
TP610 REC/PB
W2
4.2V
1.2V
25Hz
GND
TP603 SP PB
W6
2.5V
GND
TP607 REC/PB
W10
2.6Vpp
4.43MHz
IC601 ① REC / PB
W3
4.5V
504Hz
TP604 SP REC/PB
W7
2.5V
GND
TP608 REC/PB
W11
4.9V
15.7KHz
IC601 ⑯ REC/PB
W4
4.5V
500Hz
TP605 REC/PB
W8
3.3V
GND
TP609 SP REC/PB

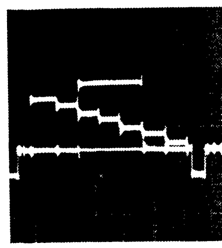
4-5. VIDEO/CHROMA SCHEMATIC DIAGRAM (N9053G)


D.O.P
REC H V8
DELEY REC H V9
PB H V10
S31
RF SW PLS S28
REC CURR-EMP L V5
EVER 5V V1
TV/VCR V12
REG 12V V19
INS. V.D. V13
COMP SYNC V6
SUB CARRIER V4
SUB (GND) V5
SEARCH L V14
V15
TRI203
TRI254
TRI252
TRI235
TRI234
TRI523 UN4122
IC1201 AN3215K
TRI206
TRI207
TRI208
TRI209
IC1208 LA7308
TRI242
TRI255
TRI213 UN4122
TRI236
TRI247
TRI212
IC1202 AN3321K
CN1207
SP REC H
REC 9V
GND
REC Y
REC C
SS H
CN1206
RF SW PLS
SEARCH H
N C
CN1205
REC 5V
PICTURE CTRL
GND
COLOR H
TU/AV (L)
CN1201
N C
VIDEO IN
GND
VIDEO OUT
REG 12V
TU/AV (L)
VCR - H
EVER 5V
A/V CONT
AUDIO IN
GND
AUDIO OUT
TRI220 UN4122
TRI221
IC1205 HA1708
5.0V REG
AUDIO OUT
GND
AUDIO IN
CN1202
EVER 10V
GND
REG 12V
GND
DL1401
2H DL
TRI409
TRI410
IC1403 TK15061Z
TRI418 UN4122
TRI419
IC1401 MS593
TRI416
TRI243
TRI211
TRI415
DL1202
IC1402 BA7025L
TRI411
TRI413
TRI407
TRI402
TRI403
TRI404
FL1402 3425 (A)
4.43MHz BPF
5.06MHz BPF
FL1403 3425(B)
1.4MHz LPF
CN1209
PB C
GND
PB Y
REC 5V
VOLTAGE : REC MODE
( ) : PB MODE
E.E MODE
REC MODE Y
REC MODE C
PB MODE Y
PB MODE C

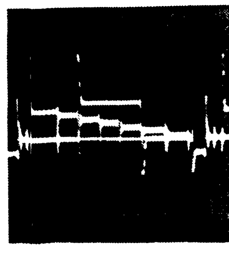
VIDEO WAVEFOR



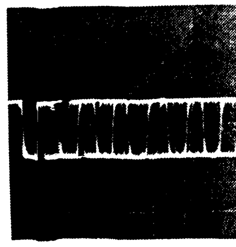
TP1212 REC
INPUT SIGNAL



IC1201 15 pin RE
LUMINANCE SIGN



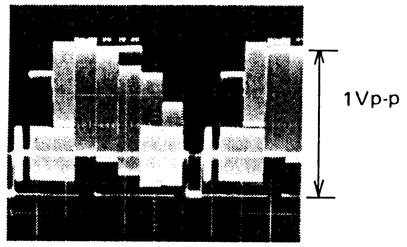
TP1203 REC
PRE EMPHASIS OU



TP1201 REC
FM MODULATOR OU

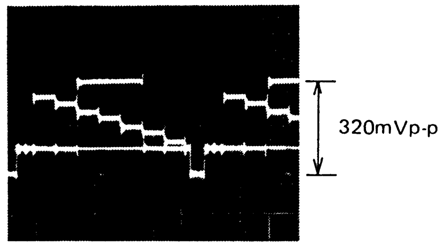
VIDEO WAVEFORMS

W1



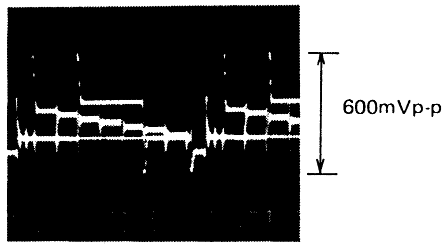
TP1212 REC
INPUT SIGNAL
X = 10µs
Y = 200mV

W2



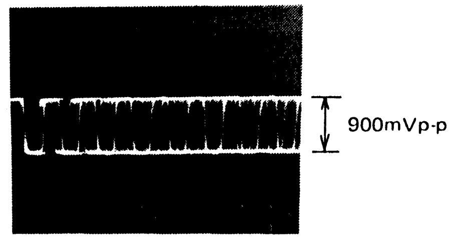
IC1201 15 pin REC
LUMINANCE SIGNAL
X = 10µs
Y = 100mV

W3



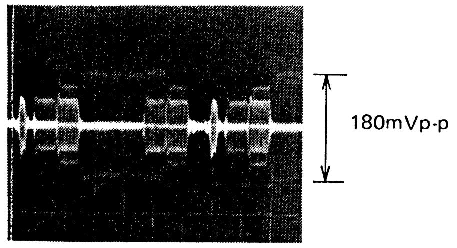
TP1203 REC
PRE EMPHASIS OUTPUT
X = 10µs
Y = 200mV

W4



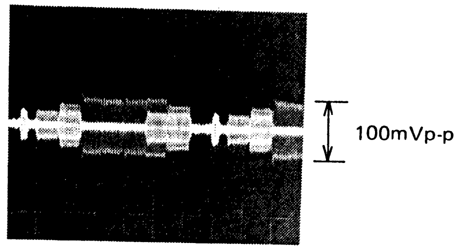
TP1201 REC
FM MODULATOR OUTPUT
X = 200ns
Y = 500mV

W5



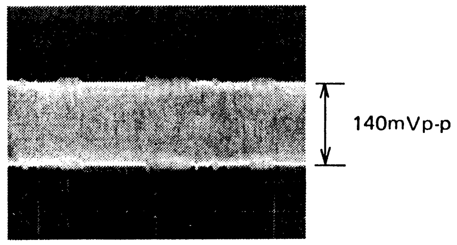
IC1401 25 pin REC
CHROMINANCE SIGNAL
X = 10µs
Y = 50mV

W6



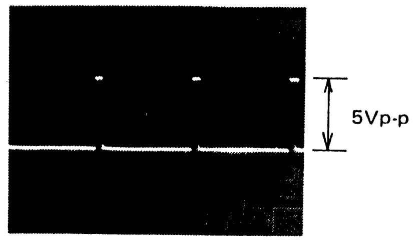
TR1416 Emitter REC
REC CONVERTED CHROMINANCE SIGNAL
X = 10µs
Y = 50mV

W7



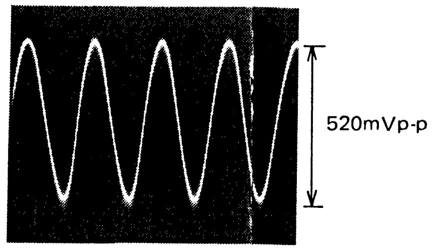
TP501 (PRE AMP) REC
REC FM SIGNAL
X = 10µs
Y = 50mV

W8



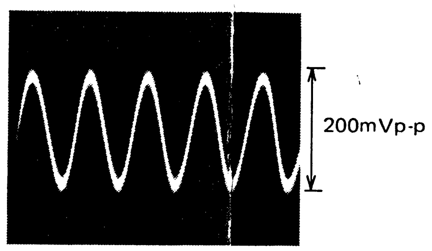
TP1204 REC
COMPOSITE SYNC PULSE
X = 20µs
Y = 2V

W9



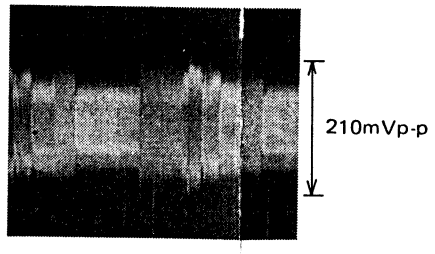
TR1402 Emitter REC
4.43 MHz VXO OUTPUT
X = 100ns
Y = 100mV

W10



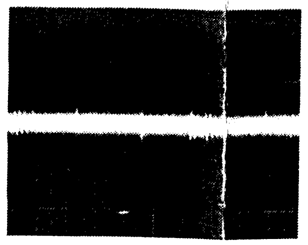
IC1401 20 pin REC
5.06 MHz MAIN CONVERTER INPUT
X = 100ns
Y = 50mV

W11



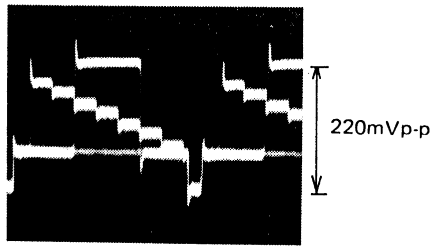
TP1402 PB
PB FM SIGNAL
X = 10µs
Y = 50mV

W12



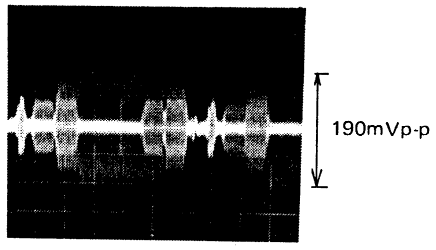
TP1207 PB
LINE NOISE CANCELAR CHECK POINT
X = 10µs
Y = 50mV

W13



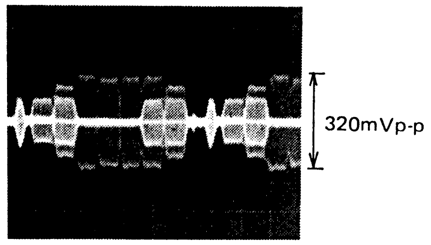
IC1201 6 pin PB
PB LUMINANCE SIGNAL
X = 10µs
Y = 50mV

W14



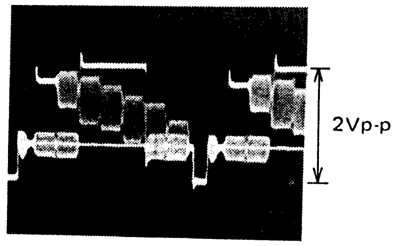
IC1401 34 pin PB
PB CONVERTED CHROMINANCE SIGNAL
X = 10µs
Y = 50mV

W15



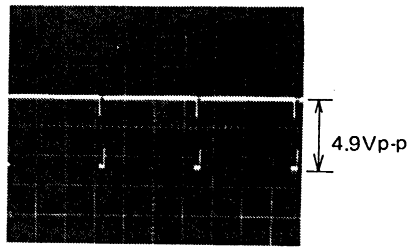
IC1201 12 pin PB
PB CHROMINANCE SIGNAL
X = 10µs
Y = 100mV

W16



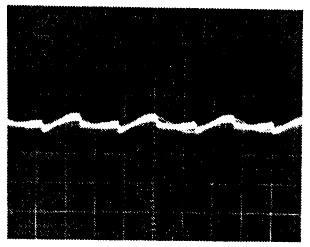
TP1201 PB
PB VIDEO SIGNAL
X = 10µs
Y = 500mV

W17



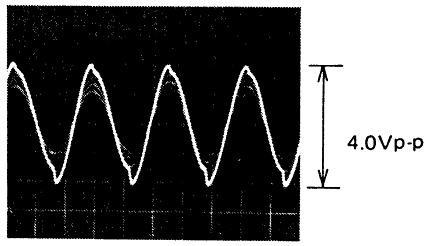
IC1401 55 pin REC
BURST GATE PULSE
X = 20µs/DIV.
Y = 2V/DIV.

W18



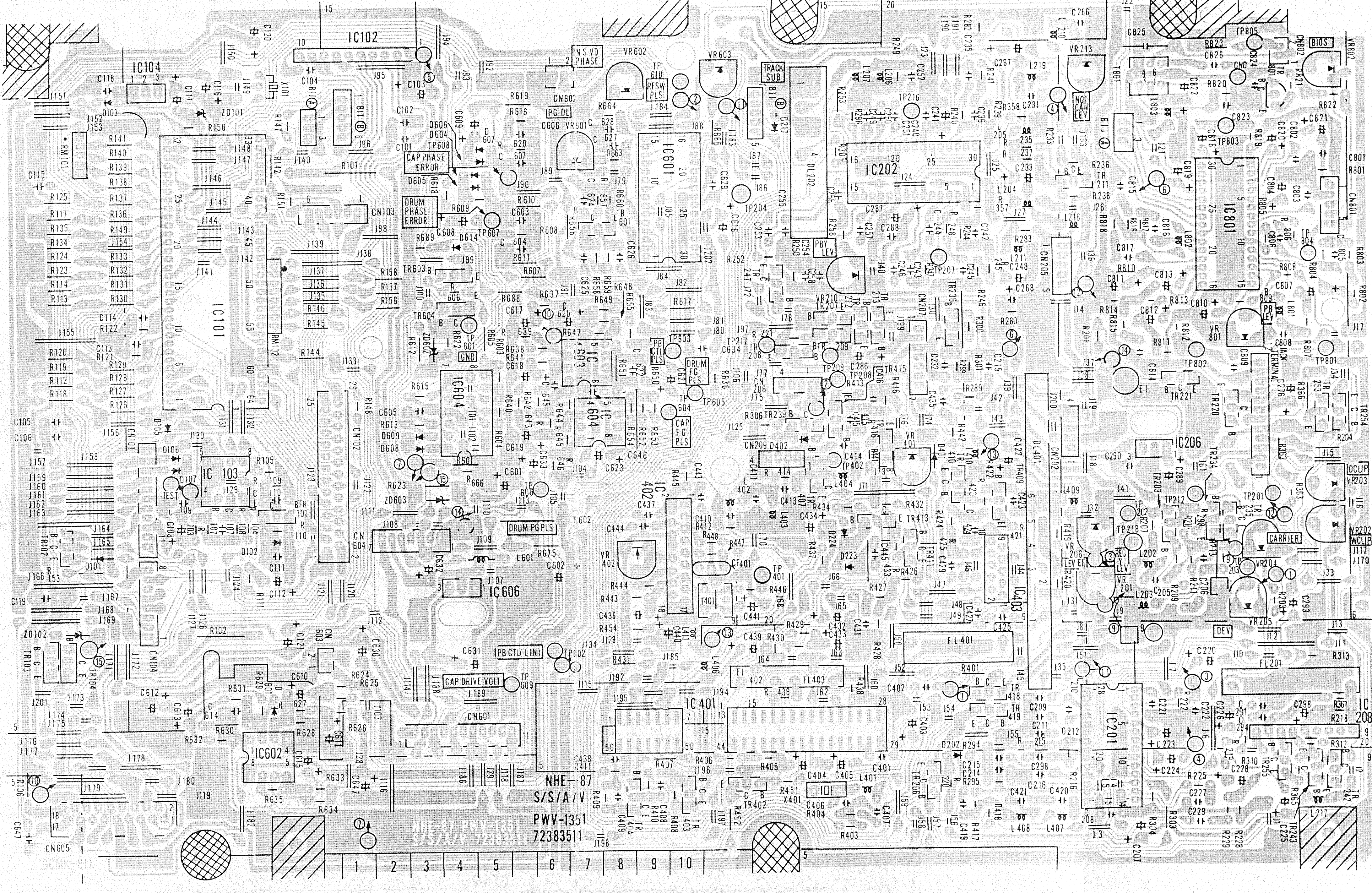
TP1401 REC (PAL)
SECAM DETECTOR
X = 50µs/DIV.
Y = 1V/DIV.

W19

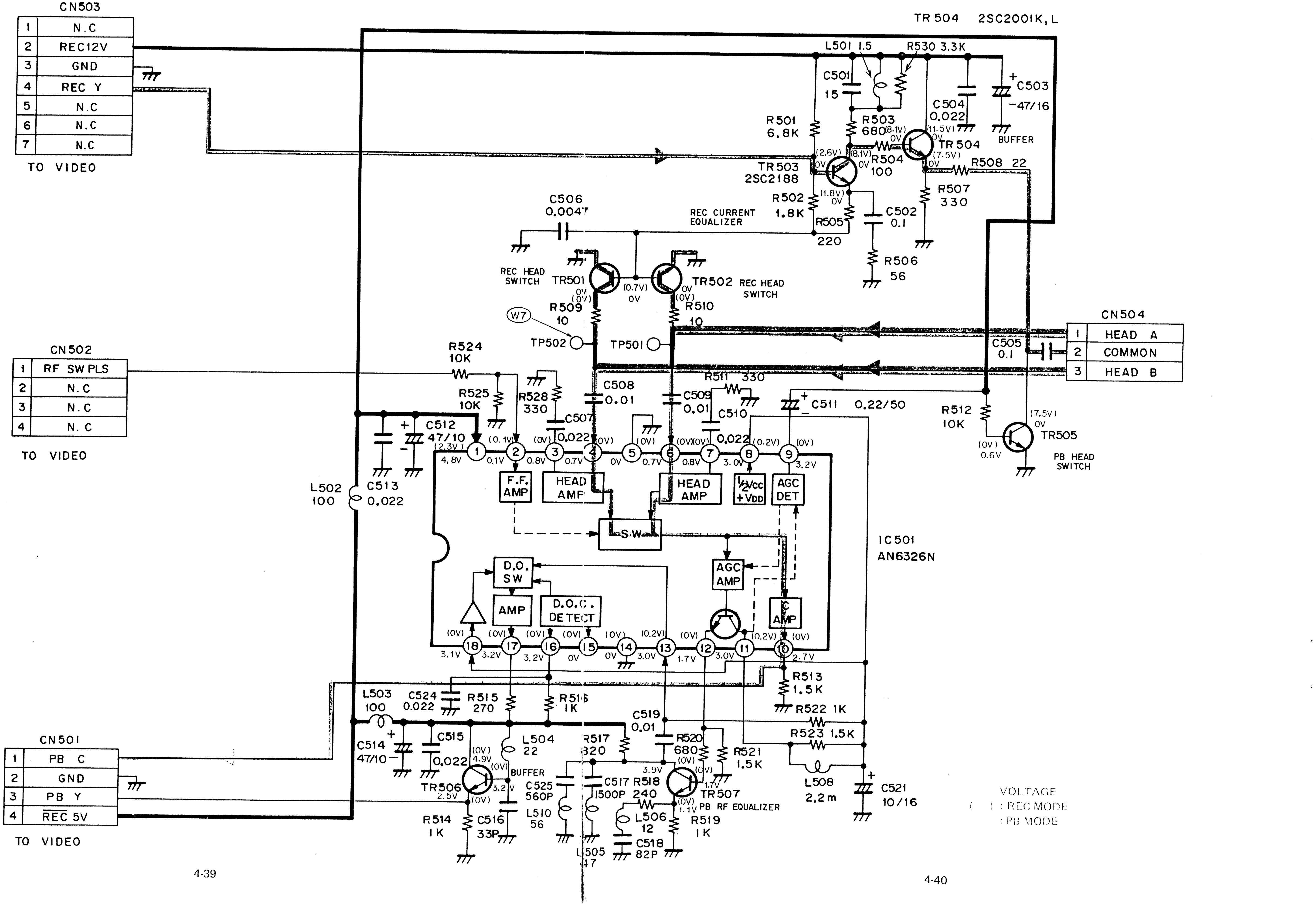


TP1401 REC (SECAM)
SECAM DETECTOR
X = 50µs/DIV.
Y = 1V/DIV.

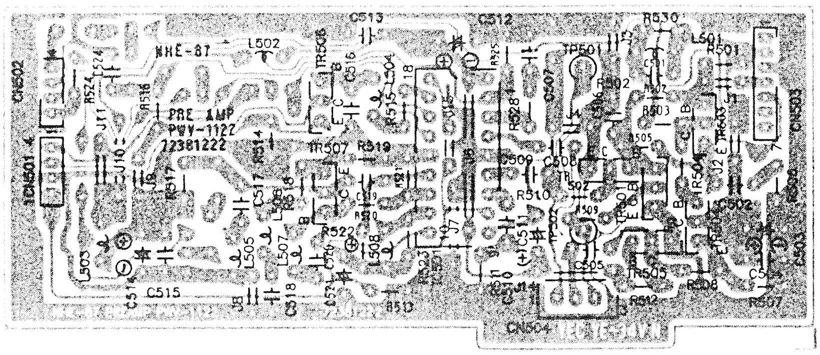
4-6. SYSCON/SERVO/AUDIO/VIDEO CIRCUIT BOARD (SOLDER SIDE) (N9053G)


IC102
IC104
IC101
IC103
IC602
IC604
IC603
IC606
IC601
IC202
IC801
IC206
IC401
IC402
IC403
IC201
IC208
CAP PHASE ERROR
DRUM PHASE ERROR
CAP DRIVE VOLT
PB CTL (LIN)
DRUM PG PLS
CAP FG PLS
DRUM FG PLS
PB CTL PLS
RFSW PLS
TRACK SUB
PB Y LEV
NOT CAR LEV
BIOS
CARRIER
DCUP VR203
WCLIP VR202
DEV
GND
NHE-87
S/S/A/V
PWV-1351
72383511
1
2
3
4
5
6
7
8
9
10

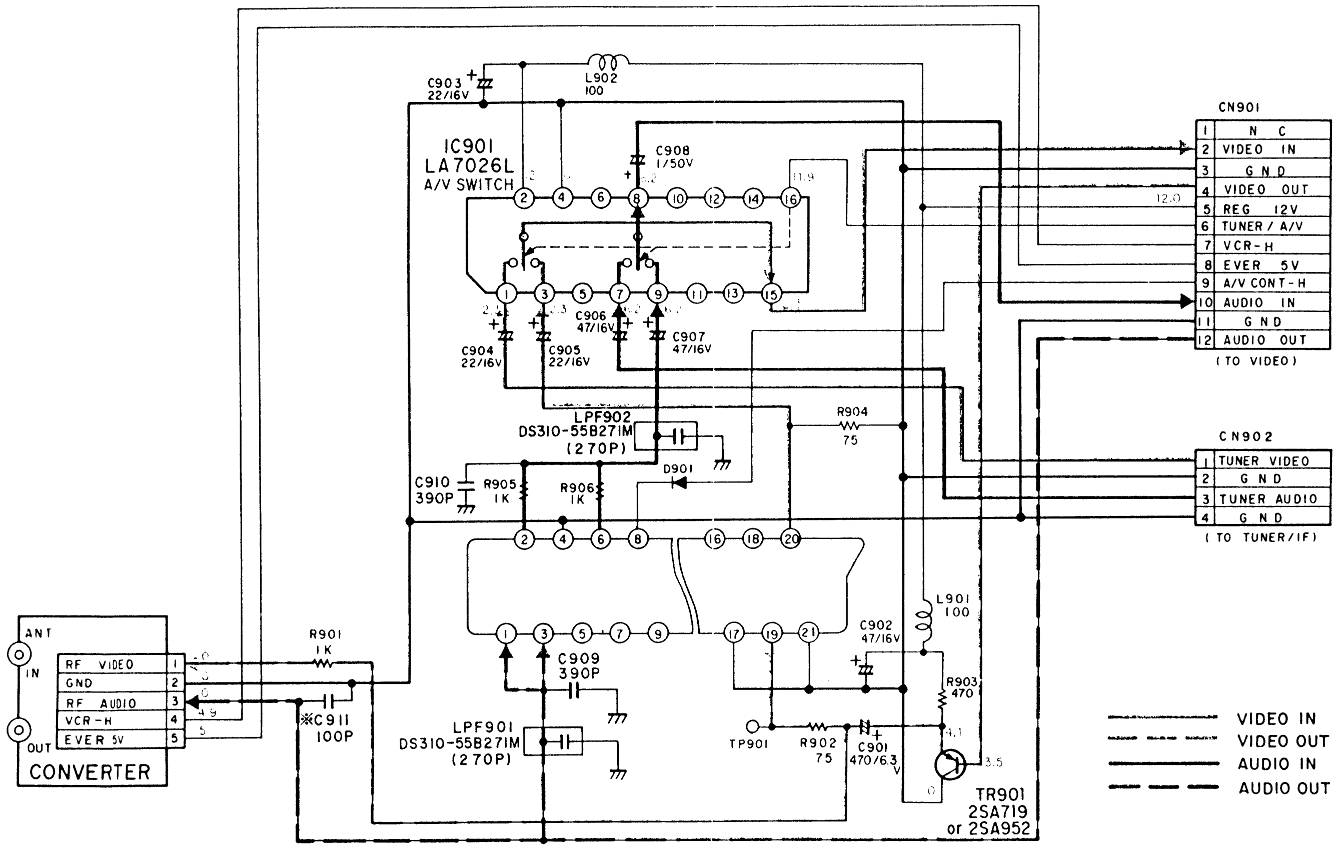
4-7. PRE AMP SCHEMATIC DIAGRAM (N9053G/N9055G)


CN503
1 N.C
2 REC12V
3 GND
4 REC Y
5 N.C
6 N.C
7 N.C
TO VIDEO
TR504 2SC2001K, L
L501 1.5
R530 3.3K
C501 15
C503 47/16
C504 0.022
BUFFER
R501 6.8K
R503 680
TR504
TR503 2SC2188
R504 100
R508 22
R502 1.8K
R505 220
R507 330
C502 0.1
REC CURRENT EQUALIZER
R506 56
C506 0.0047
REC HEAD SWITCH
TR501
TR502
R509 10
R510 10
W7
TP502
TP501
CN504
1 HEAD A
2 COMMON
3 HEAD B
C505 0.1
CN502
1 RF SW PLS
2 N.C
3 N.C
4 N.C
TO VIDEO
R524 10K
R525 10K
R528 330
C507 0.022
C508 0.01
C509 0.01
R511 330
C510 0.022
C511 0.22/50
R512 10K
TR505
PB HEAD SWITCH
C512 47/10
L502 100
C513 0.022
F.F. AMP
HEAD AMP
HEAD AMP
1/2Vcc +VDD
AGC DET
S.W
IC501 AN6326N
D.O. SW
AMP
D.O.C. DETECT
AGC AMP
C AMP
R513 1.5K
R522 1K
R523 1.5K
L503 100
C524 0.022
R515 270
R516 1K
C519 0.01
C514 47/10
C515 0.022
L504 22
BUFFER
R517 820
R520 680
R521 1.5K
TR506
C525 560P
C517 1500P
R518 240
TR507
PB RF EQUALIZER
L508 2.2m
C521 10/16
R514 1K
C516 33P
L510 56
L506 12
C518 82P
R519 1K
L505 47
CN501
1 PB C
2 GND
3 PB Y
4 REC 5V
TO VIDEO
VOLTAGE
( ) : REC MODE
: PB MODE

4-8. PRE AMP CIRCUIT BOARD (SOLDER SIDE) (N9053G/N9055G)

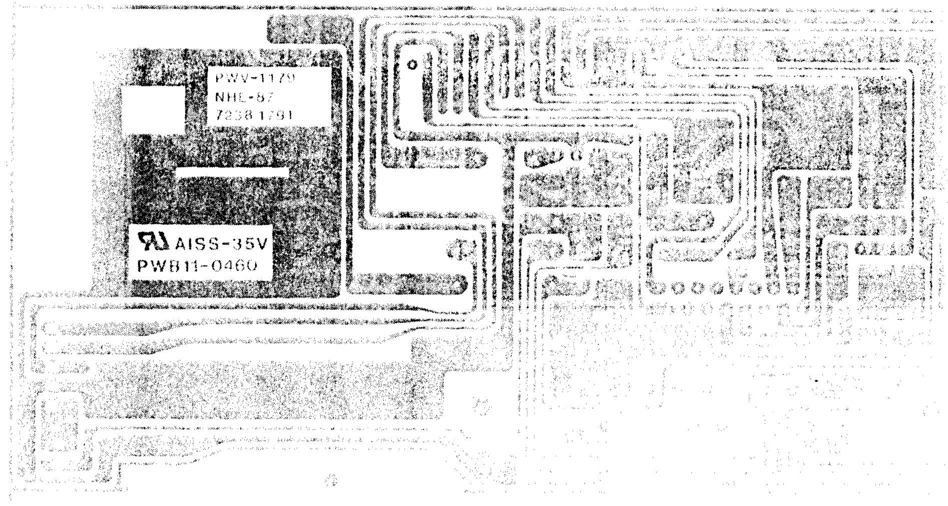

CN502
CN501
4
R524
C524
J11
J10
R516
WHE-87
L502
PRE AMP
PWY-1122
72381222
R514
R517
J9
C513
TR506
C516
L504
R515
18
TR507
R519
C517
R518
L506
R521
C519
R520
R522
L503
C514
C515
L505
L507
C520
C518
J8
C521
L508
R513
R523
C512
R525
R528
C507
TP501
R502
C506
J4
J3
R530
L501
C501
R501
R503
R505
TR503
C509
C508
TR502
R510
R509
TR501
R504
J2
J1
CN503
7
R506
C502
TP502
C511
C510
J6
J7
C505
TR505
R508
R512
R511
CN504
C503
C504
R507
D501
TR504

4-9. JACK TERMINAL SCHEMATIC DIAGRAM (N9053G/N9055G)

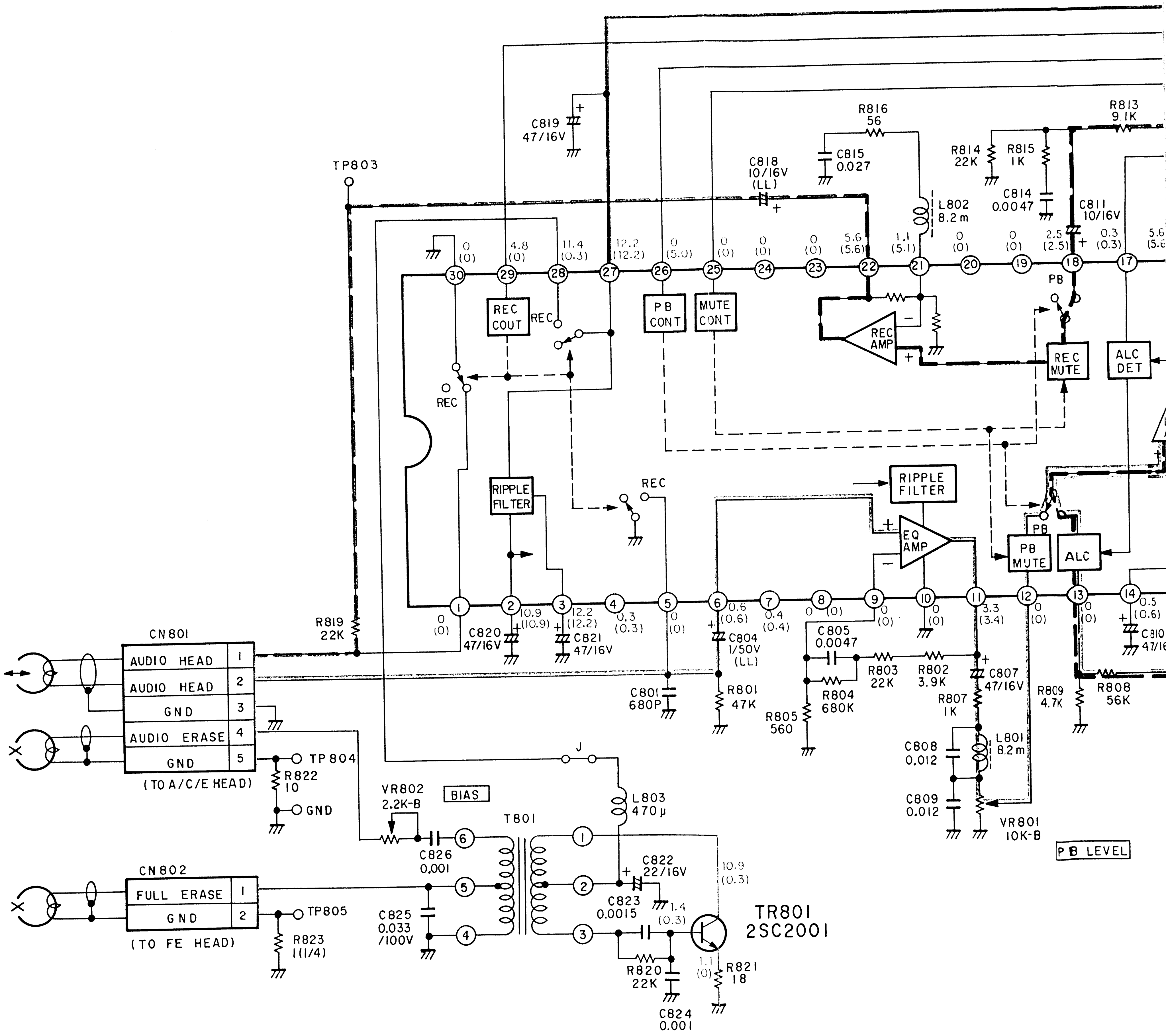

C903 22/16V
L902 100
IC901 LA7026L A/V SWITCH
C908 1/50V
C904 22/16V
C905 22/16V
C906 47/16V
C907 47/16V
CN901
1 N C
2 VIDEO IN
3 GND
4 VIDEO OUT
5 REG 12V
6 TUNER / A/V
7 VCR-H
8 EVER 5V
9 A/V CONT-H
10 AUDIO IN
11 GND
12 AUDIO OUT
(TO VIDEO)
LPF902 DS310-55B27IM (270P)
R904 75
D901
C910 390P
R905 1K
R906 1K
CN902
1 TUNER VIDEO
2 GND
3 TUNER AUDIO
4 GND
(TO TUNER/IF)
ANT IN
OUT
RF VIDEO
GND
RF AUDIO
VCR-H
EVER 5V
CONVERTER
R901 1K
※C911 100P
C909 390P
LPF901 DS310-55B27IM (270P)
C902 47/16V
L901 100
R903 470
TP901
R902 75
C901 470/6.3V
TR901 2SA719 or 2SA952
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT

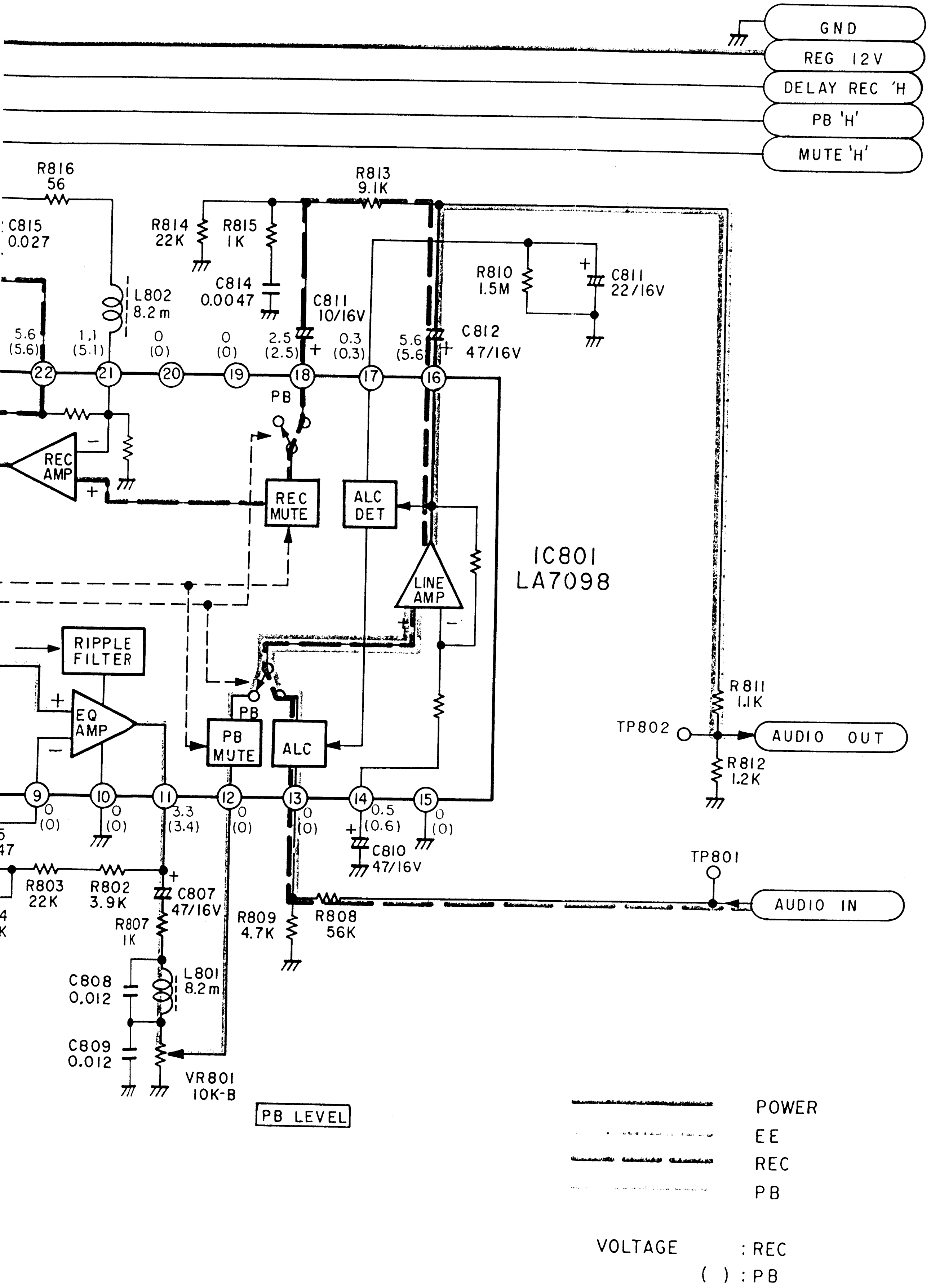
NOTE: ※ C911 is used only for Model N9053G.

4-10. JACK TERMINAL CIRCUIT BOARD (N9053G/N9055G)

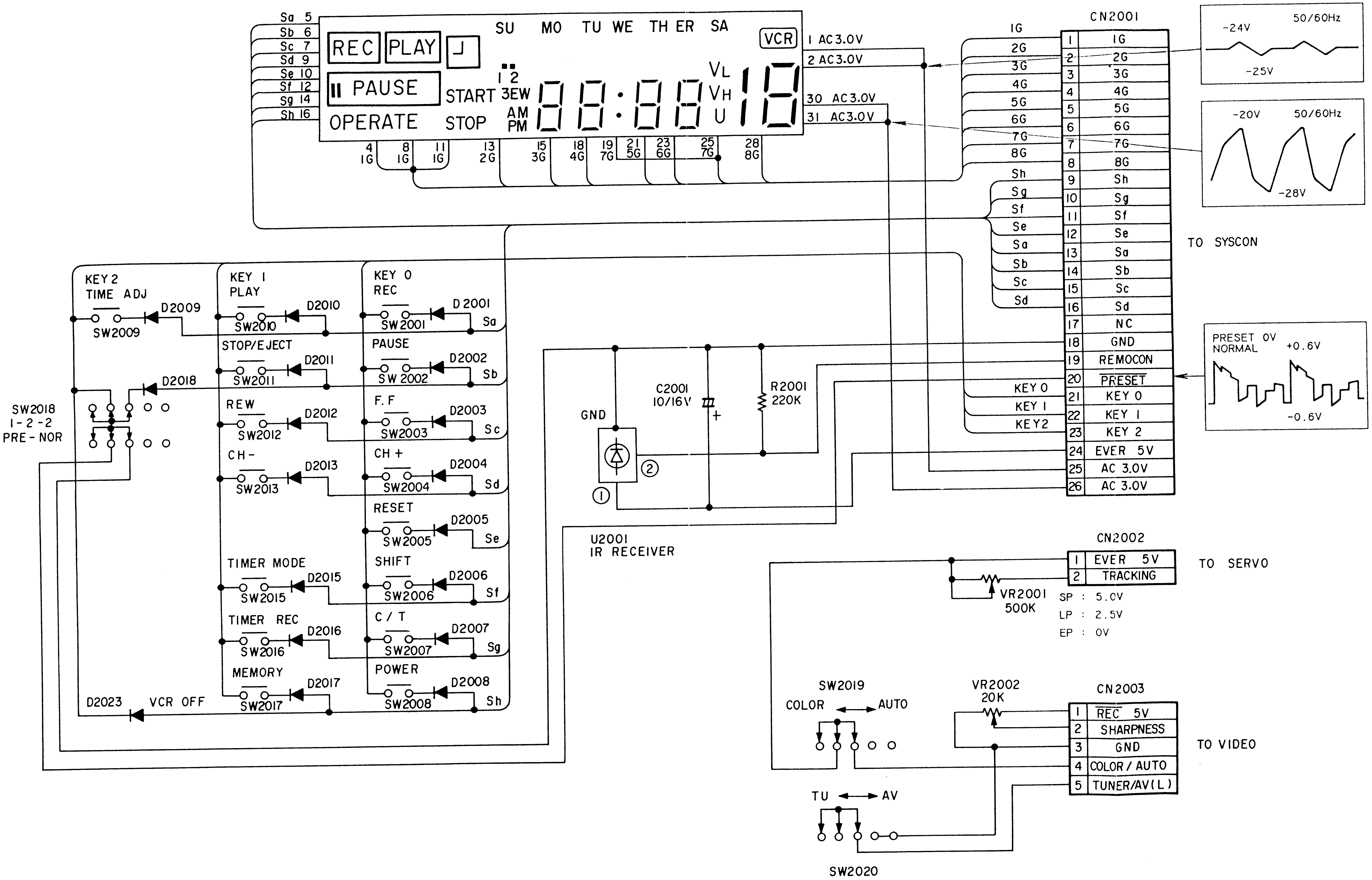

AISS-35V
PWB11-0460

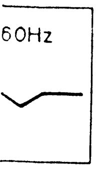
4-11. AUDIO SCHEMATIC DIAGRAM (N9053G)

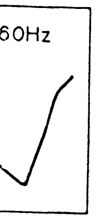

TP803
C819 47/16V
C818 10/16V (LL)
R816 56
C815 0.027
L802 8.2m
R814 22K
R815 1K
C814 0.0047
R813 9.1K
C811 10/16V
REC COUT
REC
PB CONT
MUTE CONT
REC AMP
REC MUTE
ALC DET
PB
RIPPLE FILTER
EQ AMP
PB MUTE
ALC
R819 22K
C820 47/16V
C821 47/16V
C801 680P
C804 1/50V (LL)
R801 47K
C805 0.0047
R805 560
R804 680K
R803 22K
R802 3.9K
R807 1K
C807 47/16V
R809 4.7K
R808 56K
C810 47/16
L801 8.2m
C808 0.012
C809 0.012
VR801 10K-B
PB LEVEL
CN801
AUDIO HEAD
GND
AUDIO ERASE
(TO A/C/E HEAD)
TP804
R822 10
GND
J
VR802 2.2K-B
BIAS
T801
L803 470μ
C826 0.001
C822 22/16V
C823 0.0015
C825 0.033 /100V
R820 22K
C824 0.001
R821 18
TR801 2SC2001
CN802
FULL ERASE
(TO FE HEAD)
TP805
R823 1(1/4)


GND
REG 12V
DELAY REC 'H
PB 'H'
MUTE 'H'
R816
56
C815
0.027
R814
22K
R815
1K
C814
0.0047
R813
9.1K
L802
8.2m
C811
10/16V
R810
1.5M
C811
22/16V
C812
47/16V
5.6
(5.6)
1.1
(5.1)
0
(0)
0
(0)
2.5
(2.5)
0.3
(0.3)
5.6
(5.6)
22
21
20
19
18
17
16
PB
REC AMP
REC MUTE
ALC DET
LINE AMP
IC801
LA7098
RIPPLE FILTER
EQ AMP
PB
PB MUTE
ALC
9
10
11
12
13
14
15
0
(0)
0
(0)
3.3
(3.4)
0
(0)
0
(0)
0.5
(0.6)
0
(0)
C810
47/16V
R811
1.1K
TP802
AUDIO OUT
R812
1.2K
TP801
AUDIO IN
R803
22K
R802
3.9K
C807
47/16V
R807
1K
R809
4.7K
R808
56K
C808
0.012
L801
8.2m
C809
0.012
VR801
10K-B
PB LEVEL
POWER
EE
REC
PB
VOLTAGE : REC
( ) : PB

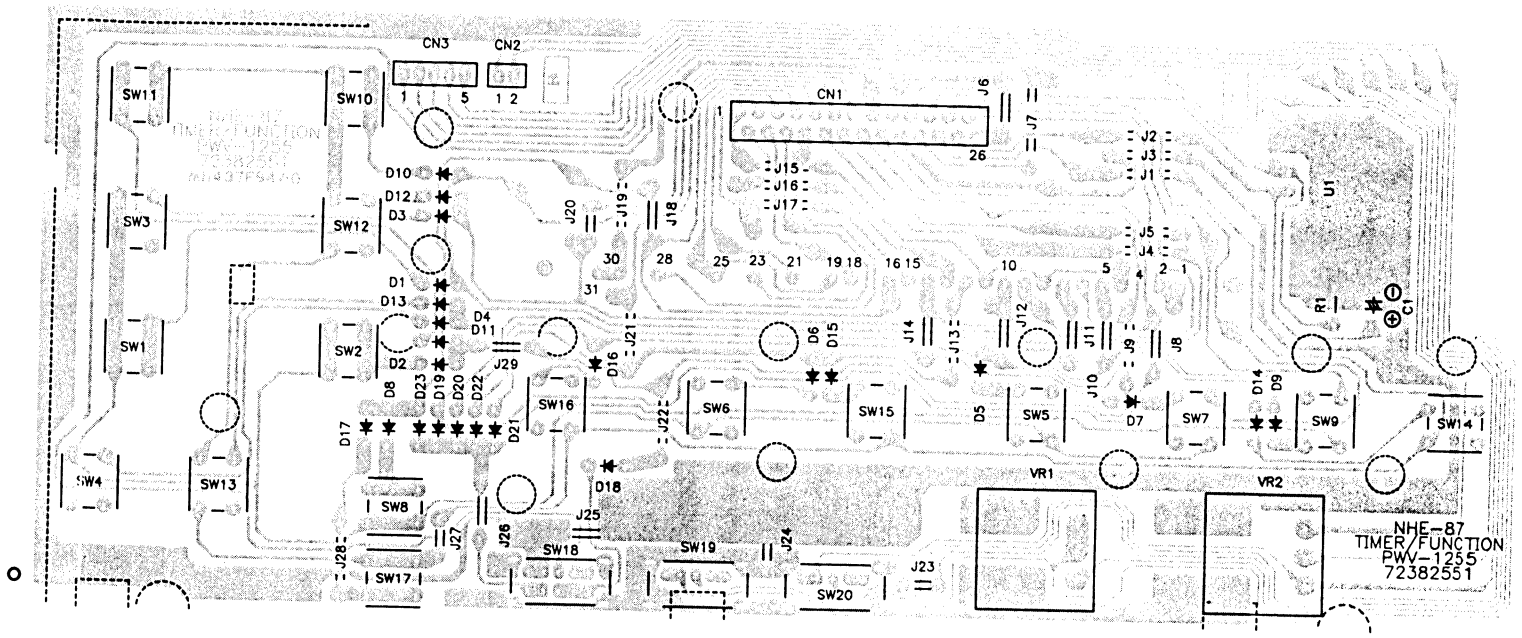
4-12. TIMER FUNCTION/SUB FUNCTION SCHEMATIC DIAGRAM (N9053G)


Sa 5
Sb 6
Sc 7
Sd 9
Se 10
Sf 12
Sg 14
Sh 16
REC
PLAY
PAUSE
OPERATE
START
STOP
SU
MO
TU
WE
TH
ER
SA
VCR
1 2
3EW
AM
PM
VL
VH
U
1 AC3.0V
2 AC3.0V
30 AC3.0V
31 AC3.0V
4 1G
8 1G
11 1G
13 2G
15 3G
18 4G
19 7G
21 5G
23 6G
25 7G
28 8G
CN2001
1 1G
2 2G
3 3G
4 4G
5 5G
6 6G
7 7G
8 8G
9 Sh
10 Sg
11 Sf
12 Se
13 Sa
14 Sb
15 Sc
16 Sd
17 NC
18 GND
19 REMOCON
20 PRESET
21 KEY 0
22 KEY 1
23 KEY 2
24 EVER 5V
25 AC 3.0V
26 AC 3.0V
KEY 0
KEY 1
KEY2
TO SYSCON
-24V
50/60Hz
-25V
-20V
50/60Hz
-28V
PRESET 0V
NORMAL
+0.6V
-0.6V
KEY 2
TIME ADJ
D2009
SW2009
KEY 1
PLAY
D2010
SW2010
KEY 0
REC
D2001
SW2001
Sa
STOP/EJECT
D2011
SW2011
PAUSE
D2002
SW2002
Sb
D2018
SW2018
1-2-2
PRE-NOR
REW
D2012
SW2012
F.F
D2003
SW2003
Sc
CH-
D2013
SW2013
CH+
D2004
SW2004
Sd
RESET
D2005
SW2005
Se
TIMER MODE
D2015
SW2015
SHIFT
D2006
SW2006
Sf
TIMER REC
D2016
SW2016
C/T
D2007
SW2007
Sg
MEMORY
D2017
SW2017
POWER
D2008
SW2008
Sh
D2023
VCR OFF
GND
C2001
10/16V
R2001
220K
①
②
U2001
IR RECEIVER
CN2002
1 EVER 5V
2 TRACKING
TO SERVO
VR2001
500K
SP : 5.0V
LP : 2.5V
EP : 0V
SW2019
COLOR
AUTO
VR2002
20K
CN2003
1 REC 5V
2 SHARPNESS
3 GND
4 COLOR/AUTO
5 TUNER/AV(L)
TO VIDEO
TU
AV
SW2020

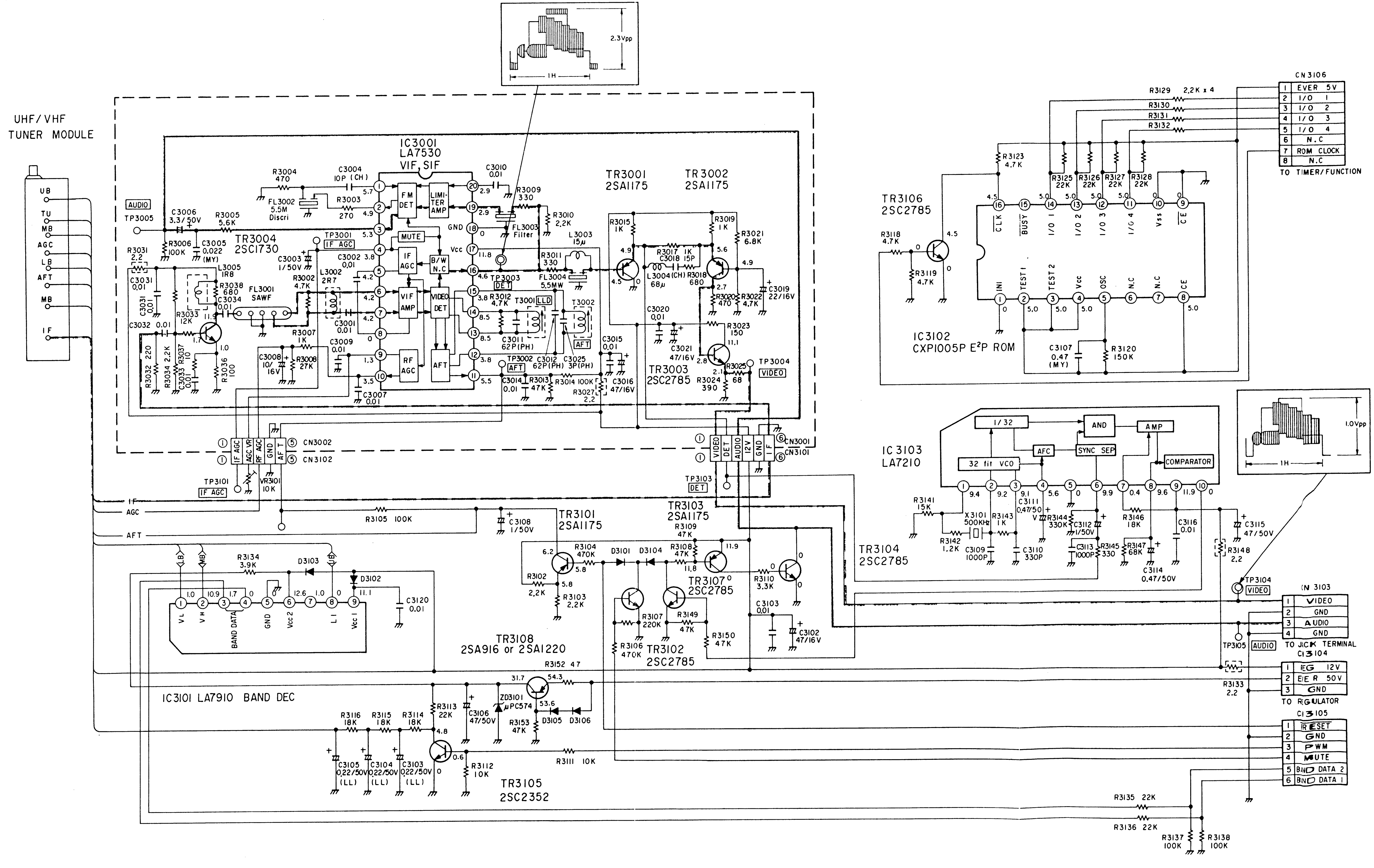




4-13. TIMER FUNCTION/SUB FUNCTION CIRCUIT BOARD (SOLDER SIDE) (N9053G)


CN3
CN2
CN1
SW11
SW10
SW3
SW12
SW1
SW2
SW4
SW13
SW8
SW17
SW16
SW18
SW19
SW20
SW6
SW15
SW5
SW7
SW9
SW14
VR1
VR2
U1
R1
C1
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17
D18
D19
D20
D21
D22
D23
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
J12
J13
J14
J15
J16
J17
J18
J19
J20
J21
J22
J23
J24
J25
J26
J27
J28
J29
NHE-87
TIMER/FUNCTION
PWV-1255
72382551

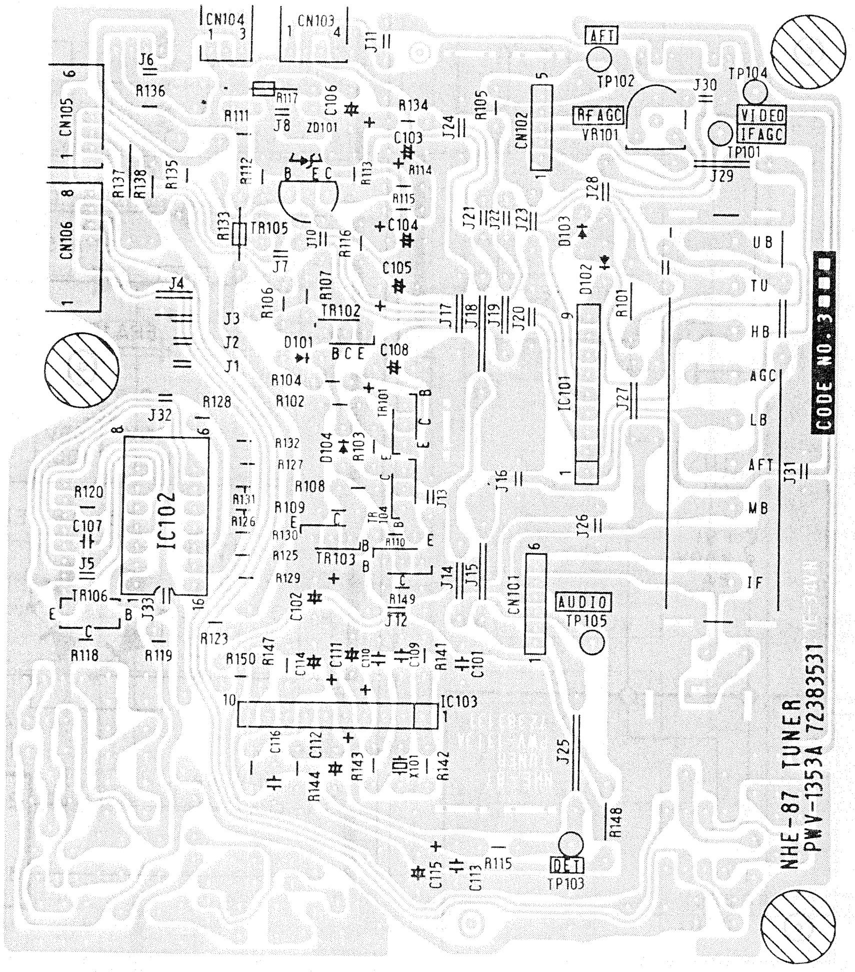
4-14. TUNER/IF SCHEMATIC DIAGRAM (N9053G)

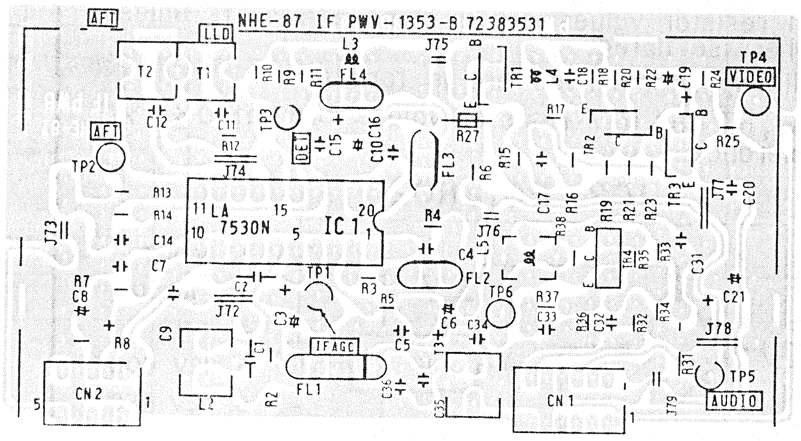


2.3Vpp
1H
UHF/VHF TUNER MODULE
UB
TU
MB
AGC
LB
AFT
MB
IF
IC3001
LA7530
VIF, SIF
FM DET
LIMITER AMP
MUTE
IF AGC
B/W N.C
VIF AMP
VIDEO DET
RF AGC
AFT
GND
Vcc
TR3001
2SA1175
TR3002
2SA1175
TR3003
2SC2785
TR3004
2SC1730
FL3001 SAWF
FL3002 5.5M Discri
FL3003 Filter
FL3004 5.5MW
T3001 LLD
T3002 AFT
AUDIO
TP3005
TP3001 IF AGC
TP3002 AFT
TP3003 DET
TP3004 VIDEO
CN3002
CN3102
CN3001
CN3101
IF AGC
AGC VR
RF AGC
GND
AFT
VIDEO
DET
AUDIO
12V
GND
IF
TP3101 IF AGC
VR3101 10K
TP3103 DET
R3105 100K
C3108 1/50V
TR3101
2SA1175
TR3103
2SA1175
TR3107
2SC2785
TR3102
2SC2785
TR3104
2SC2785
TR3108
2SA916 or 2SA1220
TR3105
2SC2352
IC3101 LA7910 BAND DEC
VL
VH
BAND DATA
GND
Vcc 2
L1
Vcc 1
D3101
D3102
D3103
D3104
D3105
D3106
ZD3101 μPC574
R3152 47
R3111 10K
TR3106
2SC2785
IC3102
CXP1005P E²P ROM
CLK
BUSY
I/O 1
I/O 2
I/O 3
I/O 4
Vss
CE
INI
TEST 1
TEST 2
Vcc
OSC
N.C
N.C
CE
R3129 2.2K x 4
R3130
R3131
R3132
CN3106
1 EVER 5V
2 I/O 1
3 I/O 2
4 I/O 3
5 I/O 4
6 N.C
7 ROM CLOCK
8 N.C
TO TIMER/FUNCTION
IC3103
LA7210
1/32
AND
AMP
AFC
SYNC SEP
32 fH VCO
COMPARATOR
X3101 500KHz
1.0Vpp
1H
TP3104 VIDEO
TP3105 AUDIO
CN 3103
1 VIDEO
2 GND
3 AUDIO
4 GND
TO JACK TERMINAL
CN3104
1 REG 12V
2 EVER 50V
3 GND
TO REGULATOR
CN3105
1 RESET
2 GND
3 PWM
4 MUTE
5 BAND DATA 2
6 BAND DATA 1
R3133 2.2
R3135 22K
R3136 22K
R3137 100K
R3138 100K

4-15. TUNER/IF CIRCUIT BOARD (SOLDER SIDE) (N9053G)

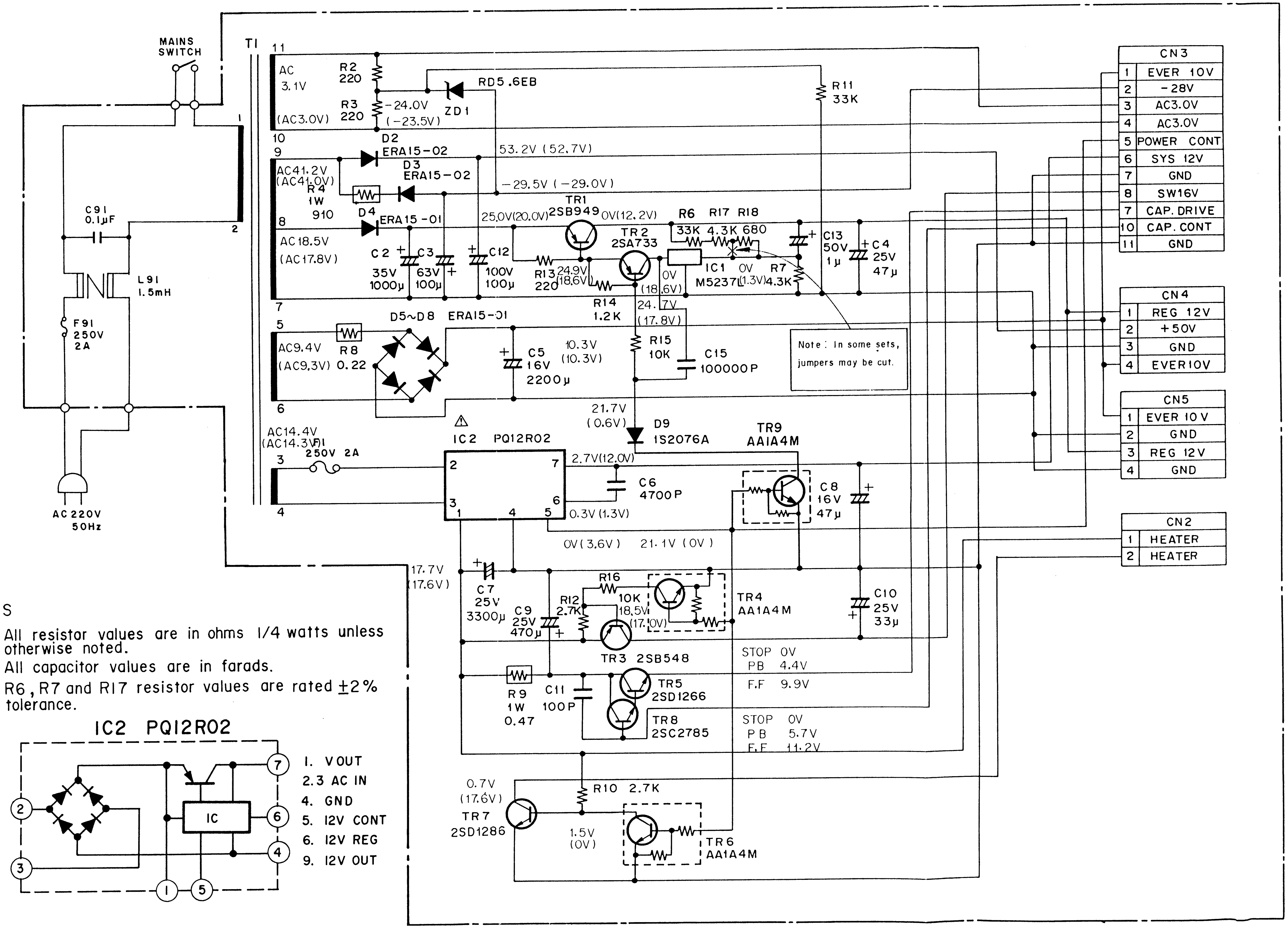
T


CN104
CN103
CN105
CN106
CN102
CN101
AFT
TP102
TP104
RF AGC
VR101
VIDEO
IF AGC
TP101
J29
J30
IC101
IC102
IC103
TR102
TR103
TR105
TR106
AUDIO
TP105
DET
TP103
UB
TU
HB
AGC
LB
AFT
MB
IF
CODE NO. 3
NHE-87 TUNER
PWV-1353A 72383531


NHE-87 IF PWV-1353-B 72383531
AFT
LLD
T2
T1
L3
FL4
J75
TR1
L4
TP4
VIDEO
TP2
TP3
DET
FL3
R4
IC 1
LA 7530N
J74
J72
J73
TP1
IF AGC
FL1
FL2
TP6
TR2
TR3
TR4
J76
J77
J78
TP5
AUDIO
CN2
CN1
L2

VIDEO
AUDIO

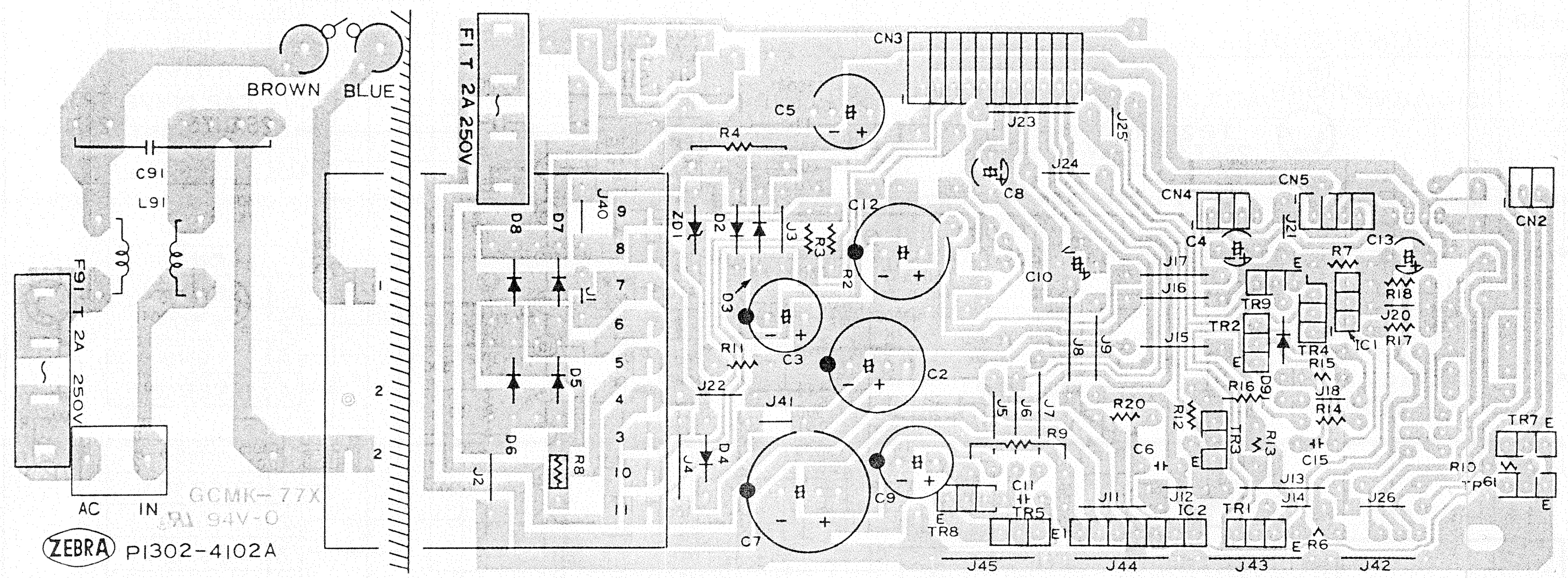
4-16. POWER/REGULATOR SCHEMATIC DIAGRAM (N9053G)


MAINS SWITCH
T1
AC 3.1V
(AC3.0V)
R2 220
R3 220
-24.0V (-23.5V)
ZD1
RD5.6EB
R11 33K
D2 ERA15-02
D3 ERA15-02
53.2V (52.7V)
-29.5V (-29.0V)
AC41.2V (AC41.0V)
R4 1W 910
D4 ERA15-01
AC18.5V (AC17.8V)
C2 35V 1000μ
C3 63V 100μ
C12 100V 100μ
TR1 2SB949
25.0V(20.0V)
0V(12.2V)
TR2 2SA733
R13 220
24.9V (18.6V)
(18.6V)
R6 33K
R17 4.3K
R18 680
IC1 M5237L
0V (1.3V)
R7 4.3K
C13 50V 1μ
C4 25V 47μ
R14 1.2K
24.7V (17.8V)
R15 10K
C15 100000P
Note : In some sets, jumpers may be cut.
C91 0.1μF
L91 1.5mH
F91 250V 2A
AC220V 50Hz
D5~D8 ERA15-01
AC9.4V (AC9.3V)
R8 0.22
C5 16V 2200μ
10.3V (10.3V)
21.7V (0.6V)
D9 1S2076A
AC14.4V (AC14.3V)
F1 250V 2A
IC2 PQ12R02
2.7V(12.0V)
C6 4700P
0.3V (1.3V)
TR9 AA1A4M
C8 16V 47μ
0V(3.6V)
21.1V (0V)
17.7V (17.6V)
C7 25V 3300μ
C9 25V 470μ
R12 2.7K
R16 10K
18.5V (17.0V)
TR4 AA1A4M
C10 25V 33μ
TR3 2SB548
R9 1W 0.47
C11 100P
TR5 2SD1266
TR8 2SC2785
STOP 0V
PB 4.4V
F.F 9.9V
STOP 0V
PB 5.7V
F.F 11.2V
R10 2.7K
0.7V (17.6V)
TR7 2SD1286
1.5V (0V)
TR6 AA1A4M
CN3
1 EVER 10V
2 -28V
3 AC3.0V
4 AC3.0V
5 POWER CONT
6 SYS 12V
7 GND
8 SW16V
7 CAP. DRIVE
10 CAP. CONT
11 GND
CN4
1 REG 12V
2 +50V
3 GND
4 EVER10V
CN5
1 EVER 10V
2 GND
3 REG 12V
4 GND
CN2
1 HEATER
2 HEATER
IC2 PQ12R02
IC
1. VOUT
2.3 AC IN
4. GND
5. 12V CONT
6. 12V REG
9. 12V OUT

NOTES

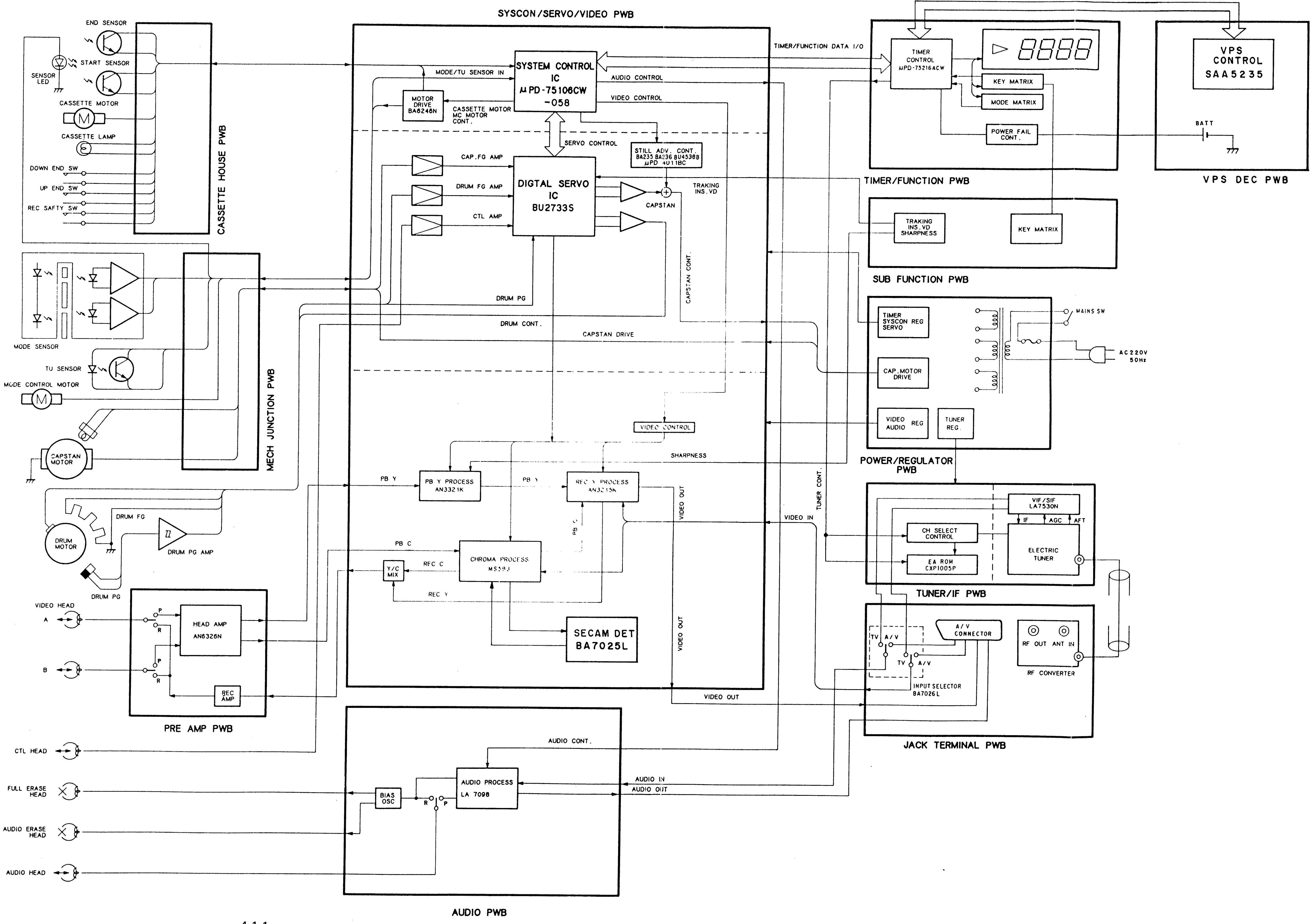
1. All resistor values are in ohms 1/4 watts unless otherwise noted.
2. All capacitor values are in farads.
3. R6, R7 and R17 resistor values are rated ±2% tolerance.

4-17. POWER/REGULATOR CIRCUIT BOARD (N9053G)


BROWN
BLUE
F1 T 2A 250V
C91
L91
F91 T 2A 250V
AC IN
GCMK-77X
94V-0
ZEBRA
P1302-4102A
D8
D7
D6
D5
J1
J2
R8
J40
9
8
7
6
5
4
3
10
11
2
1
ZD1
D2
D3
D4
J3
R3
R2
R4
R11
C3
C5
C12
C2
C7
C9
J4
J22
J41
CN3
J23
J25
J24
C8
C10
J5
J6
J7
J8
J9
R9
C11
TR5
TR8
E
J45
J11
J44
IC2
J12
C6
R20
R12
TR3
R13
J17
J16
J15
CN4
C4
CN5
J21
TR9
TR2
TR4
D9
R16
R15
J18
R14
C15
J13
J14
TR1
J43
R6
R7
C13
R18
J20
R17
IC1
J26
J42
R10
TP61
TR7
CN2

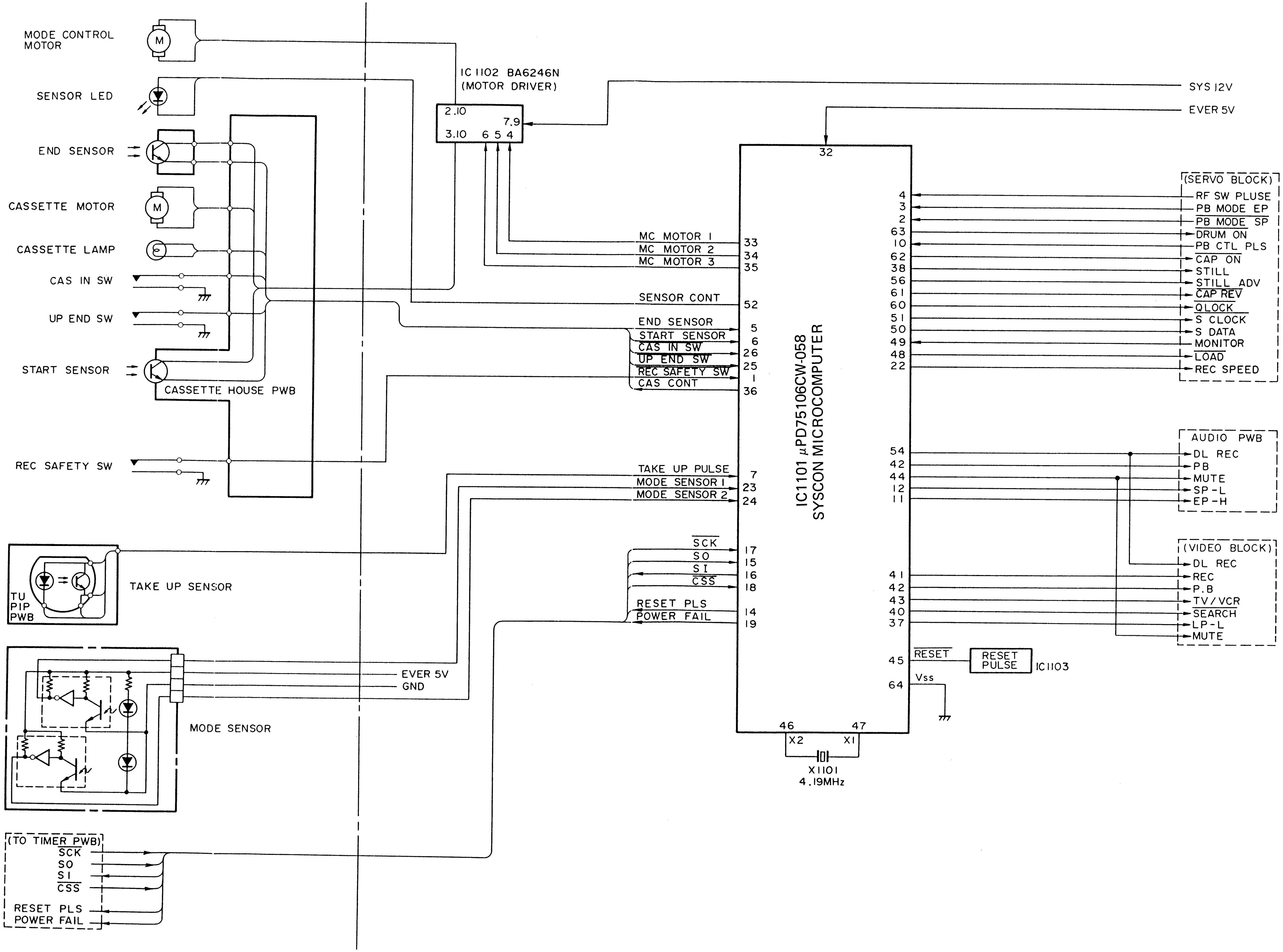
SECTION 4-1
DIAGRAMS AND TIMING CHARTS (N9055G)

1. GENERAL BLOCK DIAGRAM (N9055G)

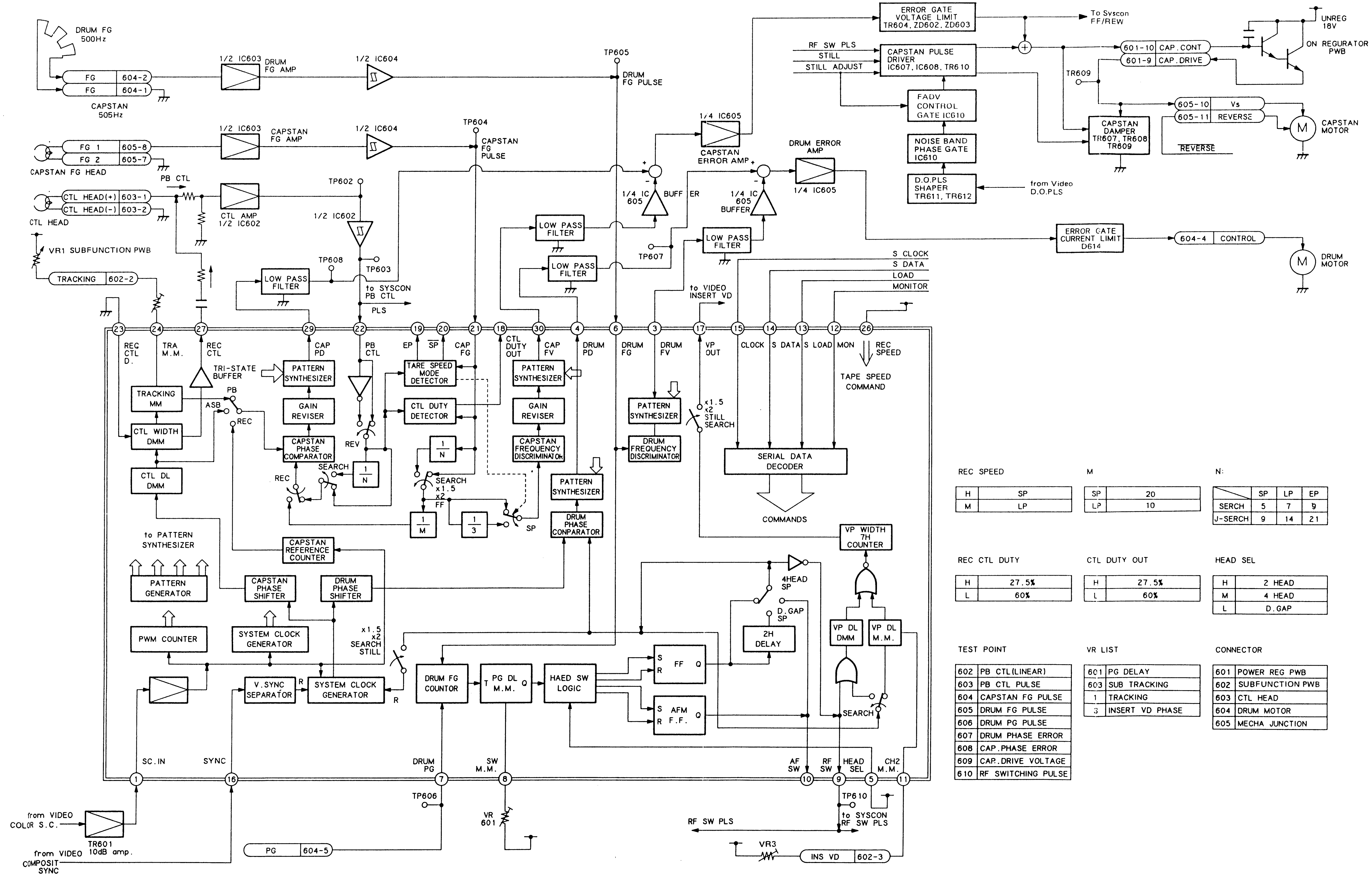

SYSCON/SERVO/VIDEO PWB
END SENSOR
START SENSOR
SENSOR LED
CASSETTE MOTOR
CASSETTE LAMP
DOWN END SW
UP END SW
REC SAFTY SW
CASSETTE HOUSE PWB
MODE SENSOR
TU SENSOR
MODE CONTROL MOTOR
CAPSTAN MOTOR
MECH JUNCTION PWB
DRUM MOTOR
DRUM FG
DRUM PG AMP
DRUM PG
MODE/TU SENSOR IN
SYSTEM CONTROL IC µPD-75106CW -058
MOTOR DRIVE BA6248N
CASSETTE MOTOR MC MOTOR CONT.
AUDIO CONTROL
VIDEO CONTROL
SERVO CONTROL
STILL ADV. CONT. BA235 BA236 BU4538B µPD 4011BC
CAP.FG AMP
DRUM FG AMP
CTL AMP
DIGTAL SERVO IC BU2733S
CAPSTAN
TRAKING INS.VD
CAPSTAN CONT.
DRUM PG
DRUM CONT.
CAPSTAN DRIVE
VIDEO CONTROL
SHARPNESS
PB Y
PB Y PROCESS AN3321K
PB Y
REC Y PROCESS AN3215K
PB C
PB C
CHROMA PROCESS M5593
Y/C MIX
REC C
REC Y
SECAM DET BA7025L
VIDEO OUT
VIDEO OUT
VIDEO OUT
VIDEO IN
TUNER CONT.
VIDEO HEAD
A
B
P
R
HEAD AMP AN6326N
REC AMP
PRE AMP PWB
CTL HEAD
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD
AUDIO CONT.
AUDIO PROCESS LA 7098
BIAS OSC
R
P
AUDIO IN
AUDIO OUT
AUDIO PWB
TIMER/FUNCTION DATA I/O
TIMER CONTROL µPD-75216ACW
KEY MATRIX
MODE MATRIX
POWER FAIL CONT.
TIMER/FUNCTION PWB
VPS CONTROL SAA5235
BATT
VPS DEC PWB
TRAKING INS.VD SHARPNESS
KEY MATRIX
SUB FUNCTION PWB
TIMER SYSCON REG SERVO
CAP.MOTOR DRIVE
VIDEO AUDIO REG
TUNER REG.
MAINS SW
AC220V 50Hz
POWER/REGULATOR PWB
VIF/SIF LA7530N
IF
AGC
AFT
CH SELECT CONTROL
EA ROM CXP1005P
ELECTRIC TUNER
TUNER/IF PWB
A/V CONNECTOR
TV A/V
TV A/V
INPUT SELECTOR BA7026L
RF OUT ANT IN
RF CONVERTER
JACK TERMINAL PWB

2. BLOCK DIAGRAM

2-1. SYSTEM CONTROL BLOCK DIAGRAM (N9055G)


MODE CONTROL MOTOR
SENSOR LED
END SENSOR
CASSETTE MOTOR
CASSETTE LAMP
CAS IN SW
UP END SW
START SENSOR
CASSETTE HOUSE PWB
REC SAFETY SW
TU PIP PWB
TAKE UP SENSOR
MODE SENSOR
EVER 5V
GND
(TO TIMER PWB)
SCK
SO
SI
CSS
RESET PLS
POWER FAIL
IC1102 BA6246N (MOTOR DRIVER)
2.10
3.10
7.9
6 5 4
SYS 12V
EVER 5V
MC MOTOR 1
MC MOTOR 2
MC MOTOR 3
SENSOR CONT
END SENSOR
START SENSOR
CAS IN SW
UP END SW
REC SAFETY SW
CAS CONT
TAKE UP PULSE
MODE SENSOR 1
MODE SENSOR 2
SCK
SO
SI
CSS
RESET PLS
POWER FAIL
32
33
34
35
52
5
6
26
25
1
36
7
23
24
17
15
16
18
14
19
IC1101 μPD75106CW-058 SYSCON MICROCOMPUTER
46
X2
47
X1
X1101 4.19MHz
4
3
2
63
10
62
38
56
61
60
51
50
49
48
22
54
42
44
12
11
41
42
43
40
37
45
64
RESET
Vss
RESET PULSE
IC1103
(SERVO BLOCK)
RF SW PLUSE
PB MODE EP
PB MODE SP
DRUM ON
PB CTL PLS
CAP ON
STILL
STILL ADV
CAP REV
QLOCK
S CLOCK
S DATA
MONITOR
LOAD
REC SPEED
AUDIO PWB
DL REC
PB
MUTE
SP-L
EP-H
(VIDEO BLOCK)
DL REC
REC
P.B
TV/VCR
SEARCH
LP-L
MUTE

2-2. SERVO CONTROL BLOCK DIAGRAM (N9055G)


DRUM FG
500Hz
FG
604-2
FG
604-1
CAPSTAN
505Hz
1/2 IC603
DRUM
FG AMP
1/2 IC604
TP605
DRUM
FG PULSE
FG 1
605-8
FG 2
605-7
CAPSTAN FG HEAD
1/2 IC603
CAPSTAN
FG AMP
1/2 IC604
TP604
CAPSTAN
FG
PULSE
PB CTL
CTL HEAD(+)
603-1
CTL HEAD(-)
603-2
CTL HEAD
CTL AMP
1/2 IC602
TP602
1/2 IC602
VR1 SUBFUNCTION PWB
TRACKING
602-2
TP608
TP603
LOW PASS
FILTER
to SYSCON
PB CTL
PLS
ERROR GATE
VOLTAGE LIMIT
TR604, ZD602, ZD603
To Syscon
FF/REW
RF SW PLS
STILL
STILL ADJUST
CAPSTAN PULSE
DRIVER
IC607, IC608, TR610
FADV
CONTROL
GATE IC610
NOISE BAND
PHASE GATE
IC610
D.O.PLS
SHAPER
TR611, TR612
from Video
D.O.PLS
1/4 IC605
CAPSTAN
ERROR AMP
DRUM ERROR
AMP
1/4 IC605
1/4 IC
605
BUFF
ER
1/4 IC
605
BUFFER
LOW PASS
FILTER
LOW PASS
FILTER
LOW PASS
FILTER
TP607
ERROR GATE
CURRENT LIMIT
D614
604-4
CONTROL
DRUM
MOTOR
601-10
CAP. CONT
601-9
CAP. DRIVE
UNREG
18V
ON REGURATOR
PWB
TR609
CAPSTAN
DAMPER
TR607, TR608
TR609
605-10
Vs
605-11
REVERSE
CAPSTAN
MOTOR
REVERSE
S CLOCK
S DATA
LOAD
MONITOR
to VIDEO
INSERT VD
23
24
27
29
22
19
20
21
18
30
4
6
3
17
15
14
13
12
26
REC
CTL
D.
TRA
M.M.
REC
CTL
CAP
PD
PB
CTL
EP
SP
CAP
FG
CTL
DUTY
OUT
CAP
FV
DRUM
PD
DRUM
FG
DRUM
FV
VP
OUT
CLOCK
S DATA
S LOAD
MON
REC
SPEED
TAPE SPEED
COMMAND
TRI-STATE
BUFFER
PATTERN
SYNTHESIZER
TARE SPEED
MODE
DETECTOR
PATTERN
SYNTHESIZER
TRACKING
MM
PB
ASB
REC
GAIN
REVISER
CTL DUTY
DETECTOR
GAIN
REVISER
PATTERN
SYNTHESIZER
x1.5
x2
STILL
SEARCH
CTL WIDTH
DMM
CAPSTAN
PHASE
COMPARATOR
REV
1
N
CAPSTAN
FREQUENCY
DISCRIMINATOR
DRUM
FREQUENCY
DISCRIMINATOR
SERIAL DATA
DECODER
CTL DL
DMM
REC
SEARCH
1
N
SEARCH
x1.5
x2
FF
PATTERN
SYNTHESIZER
1
M
1
3
SP
DRUM
PHASE
CONPARATOR
COMMANDS
to PATTERN
SYNTHESIZER
CAPSTAN
REFERENCE
COUNTER
VP WIDTH
7H
COUNTER
PATTERN
GENERATOR
CAPSTAN
PHASE
SHIFTER
DRUM
PHASE
SHIFTER
4HEAD
SP
D.GAP
SP
PWM COUNTER
SYSTEM CLOCK
GENERATOR
x1.5
x2
SEARCH
STILL
2H
DELAY
VP DL
DMM
VP DL
M.M.
V.SYNC
SEPARATOR
R
SYSTEM CLOCK
GENERATOR
R
DRUM FG
COUNTOR
T
PG DL
M.M.
Q
HAED SW
LOGIC
S
R
FF
Q
S
R
AFM
F.F.
Q
SEARCH
SC.IN
SYNC
DRUM
PG
SW
M.M.
AF
SW
RF
SW
HEAD
SEL
CH2
M.M.
1
16
7
8
10
9
5
11
from VIDEO
COLOR S.C.
TR601
10dB amp.
from VIDEO
COMPOSIT
SYNC
TP606
PG
604-5
VR
601
TP610
to SYSCON
RF SW PLS
RF SW PLS
VR3
INS VD
602-3

REC SPEED

H	SP
M	LP

M

SP	20
LP	10

N:

	SP	LP	EP
SERCH	5	7	9
J-SERCH	9	14	21

REC CTL DUTY

H	27.5%
L	60%

CTL DUTY OUT

H	27.5%
L	60%

HEAD SEL

H	2 HEAD
M	4 HEAD
L	D.GAP

TEST POINT

602	PB CTL(LINEAR)
603	PB CTL PULSE
604	CAPSTAN FG PULSE
605	DRUM FG PULSE
606	DRUM PG PULSE
607	DRUM PHASE ERROR
608	CAP.PHASE ERROR
609	CAP.DRIVE VOLTAGE
610	RF SWITCHING PULSE

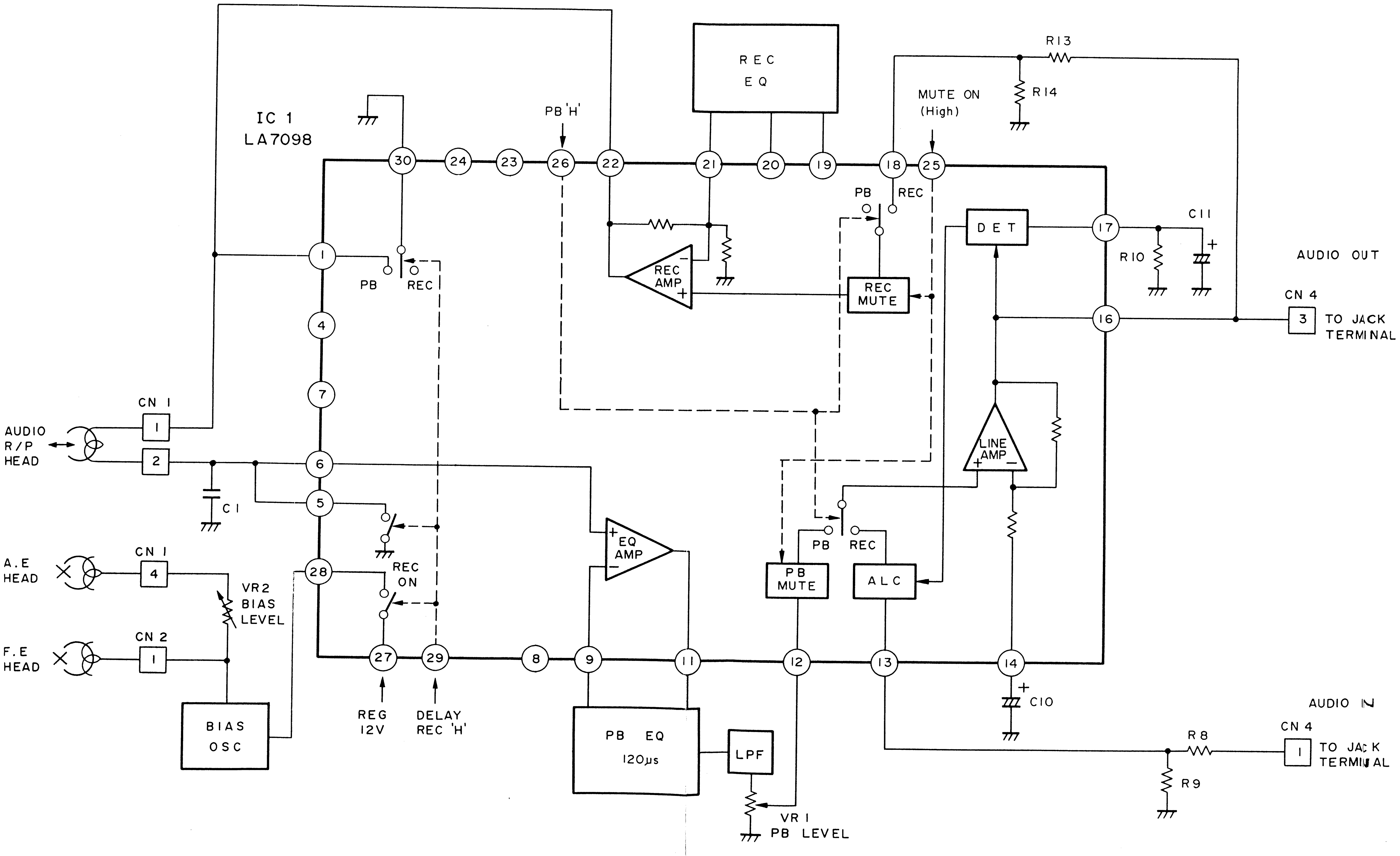
VR LIST

601	PG DELAY
603	SUB TRACKING
1	TRACKING
3	INSERT VD PHASE

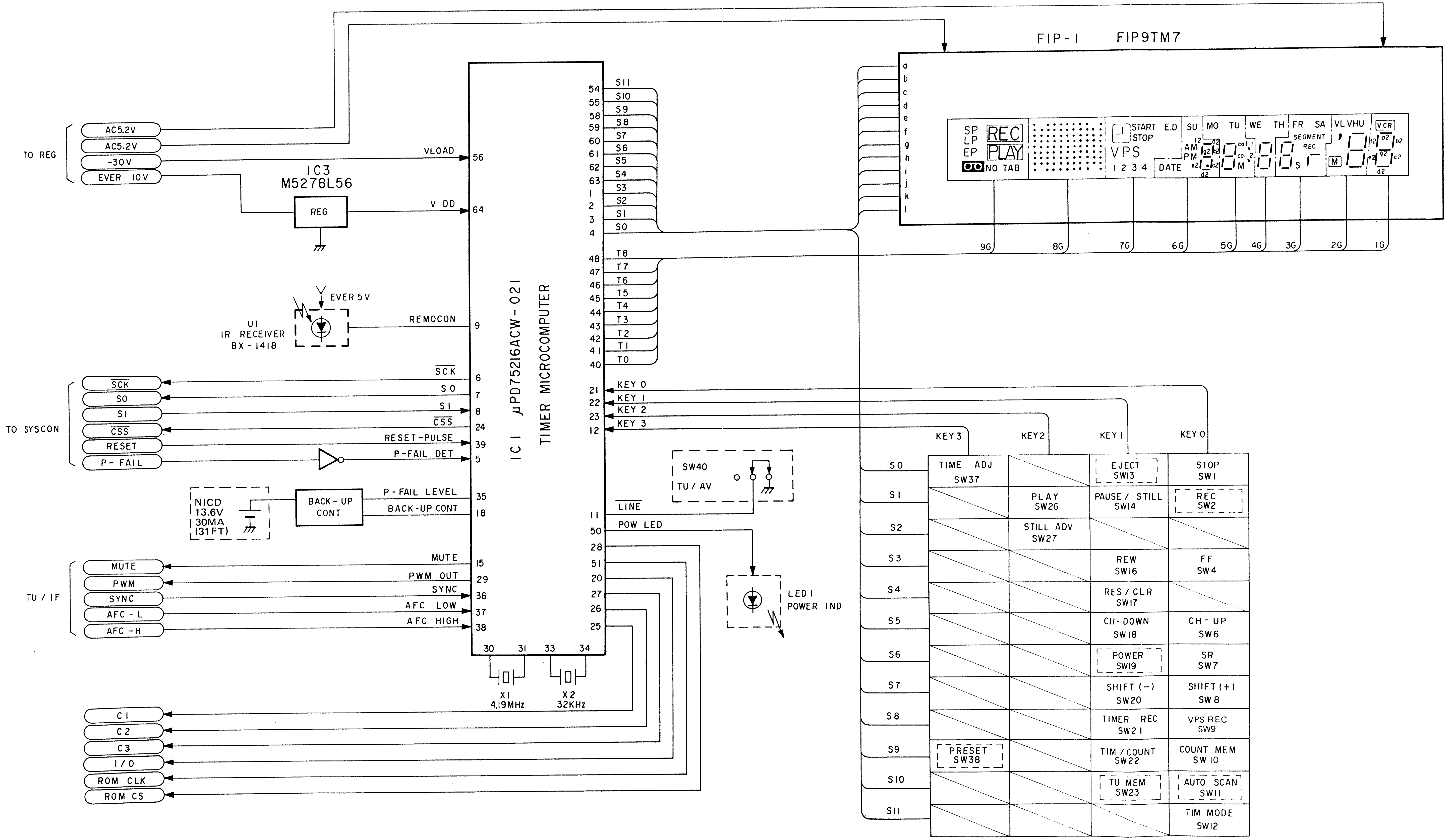
CONNECTOR

601	POWER REG PWB
602	SUBFUNCTION PWB
603	CTL HEAD
604	DRUM MOTOR
605	MECHA JUNCTION

2-3. AUDIO BLOCK DIAGRAM (N9055G)

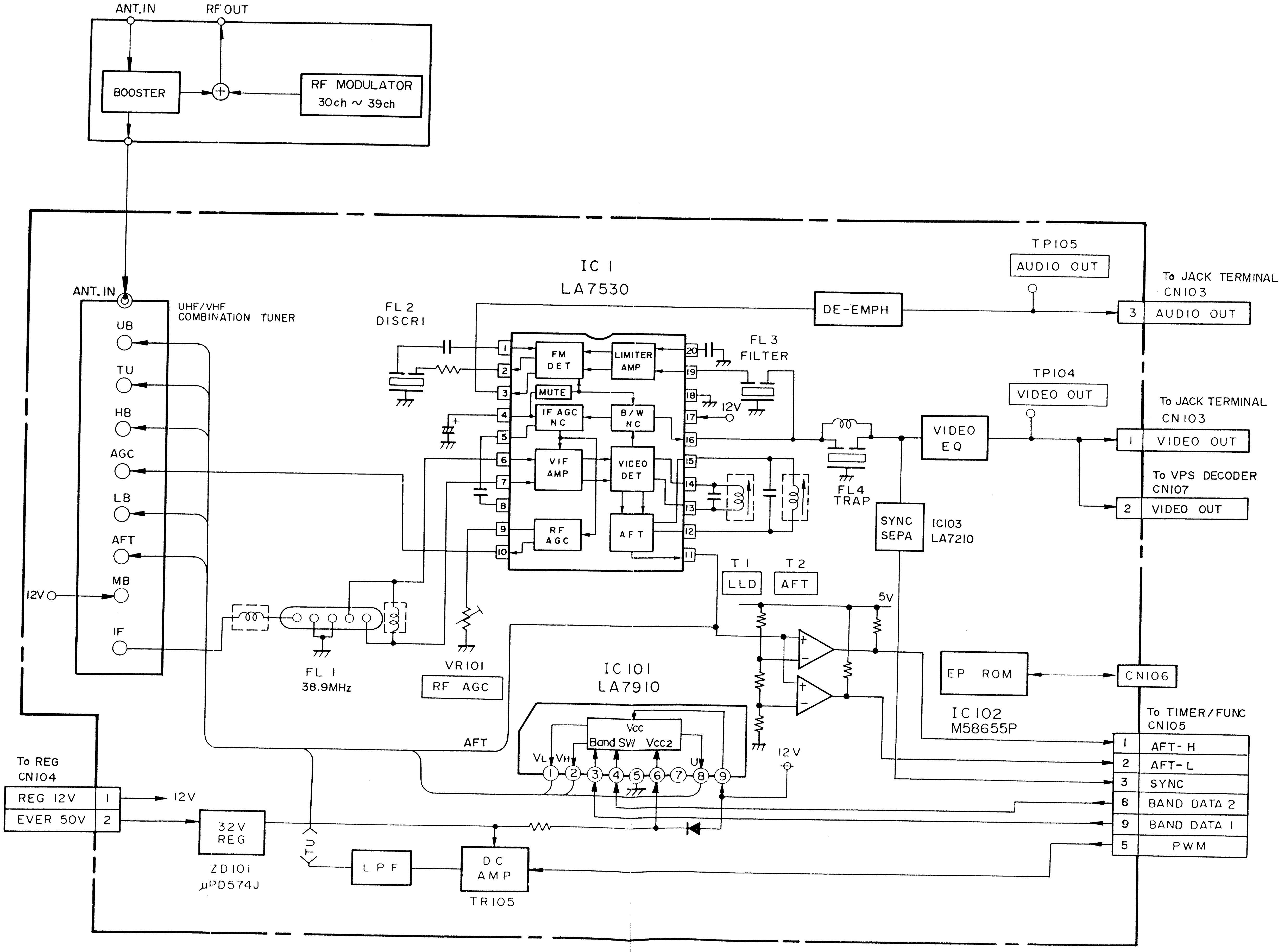

IC 1
LA7098
REC EQ
PB 'H'
MUTE ON (High)
R13
R14
30
24
23
26
22
21
20
19
18
25
PB
REC
1
PB
REC
REC AMP
REC MUTE
DET
17
C11
R10
AUDIO OUT
CN 4
3
TO JACK TERMINAL
16
4
7
CN 1
1
AUDIO R/P HEAD
2
6
C1
5
LINE AMP
EQ AMP
PB
REC
A.E HEAD
CN 1
4
28
REC ON
VR2 BIAS LEVEL
PB MUTE
ALC
F.E HEAD
CN 2
1
27
29
8
9
11
12
13
14
C10
BIAS OSC
REG 12V
DELAY REC 'H'
PB EQ 120µs
LPF
VR 1 PB LEVEL
AUDIO IN
CN 4
R8
1
TO JACK TERMINAL
R9

2-4. TIMER/FUNCTION BLOCK DIAGRAM (N9055G)


TO REG
AC5.2V
AC5.2V
-30V
EVER 10V
VLOAD
56
IC3
M5278L56
REG
V DD
64
EVER 5V
U1
IR RECEIVER
BX-1418
REMOCON
9
TO SYSCON
SCK
SO
SI
CSS
RESET
P-FAIL
SCK
S O
S I
CSS
RESET-PULSE
P-FAIL DET
6
7
8
24
39
5
NICD
13.6V
30MA
(31FT)
BACK-UP
CONT
P-FAIL LEVEL
BACK-UP CONT
35
18
TU / IF
MUTE
PWM
SYNC
AFC - L
AFC - H
MUTE
PWM OUT
SYNC
AFC LOW
AFC HIGH
15
29
36
37
38
30
31
33
34
X1
4.19MHz
X2
32KHz
C1
C2
C3
I/O
ROM CLK
ROM CS
IC1 μPD75216ACW-021
TIMER MICROCOMPUTER
54 S11
55 S10
58 S9
59 S8
60 S7
61 S6
62 S5
63 S4
1 S3
2 S2
3 S1
4 S0
48 T8
47 T7
46 T6
45 T5
44 T4
43 T3
42 T2
41 T1
40 T0
21 KEY 0
22 KEY 1
23 KEY 2
12 KEY 3
SW40
TU / AV
11 LINE
50 POW LED
28
51
20
27
26
25
LED1
POWER IND
FIP-1 FIP9TM7
a
b
c
d
e
f
g
h
i
j
k
l
SP
LP
EP
REC
PLAY
NO TAB
START
STOP
E.D
VPS
1 2 3 4
DATE
SU
MO
TU
WE
TH
FR
SA
VL VHU
VCR
AM
PM
SEGMENT
REC
S
M
col 1
col 2
f2
a2
b2
g2
e2
c2
d2
9G
8G
7G
6G
5G
4G
3G
2G
1G

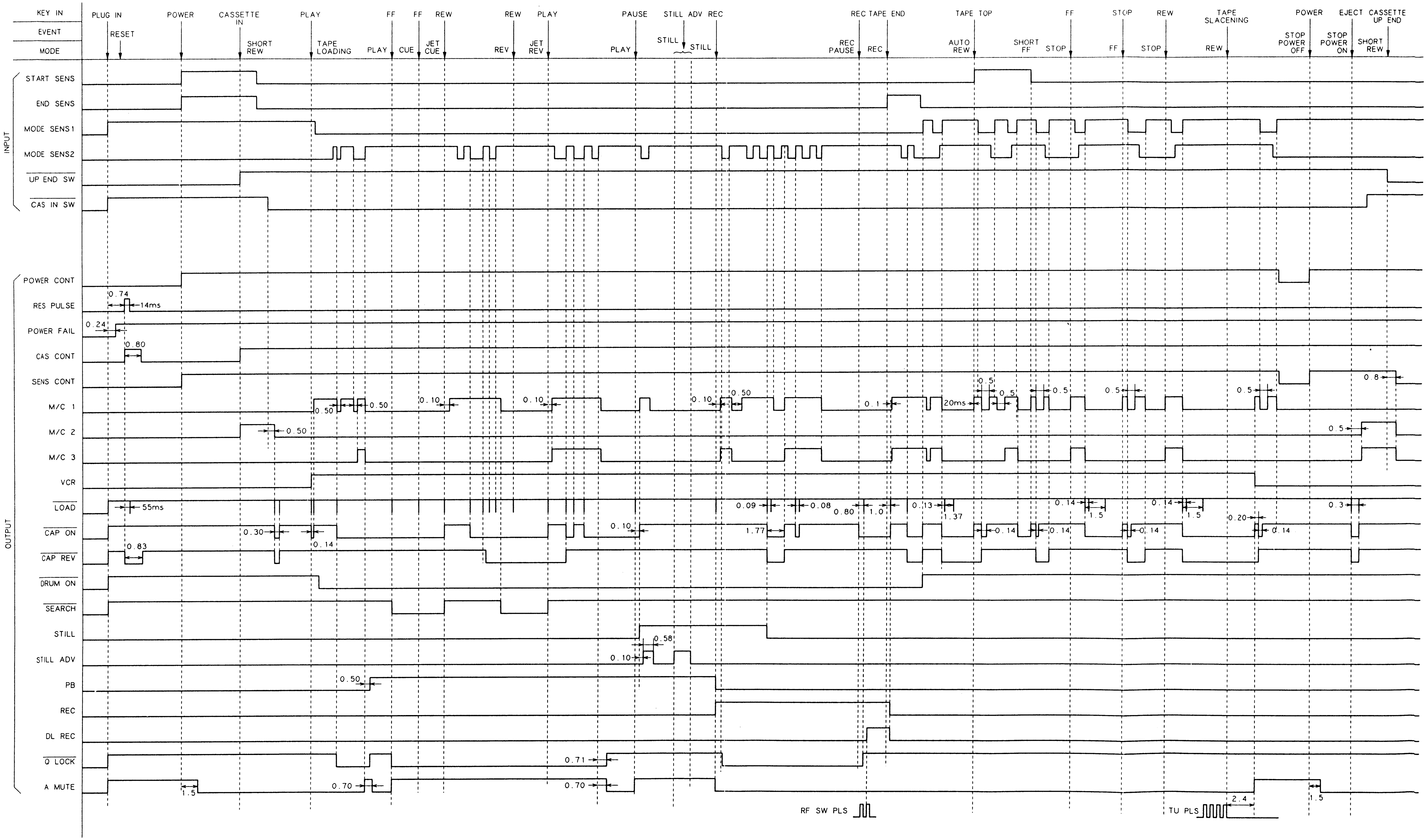
	KEY 3	KEY 2	KEY 1	KEY 0
S0	TIME ADJ SW37		EJECT SW13	STOP SW1
S1		PLAY SW26	PAUSE / STILL SW14	REC SW2
S2		STILL ADV SW27		
S3			REW SW16	FF SW4
S4			RES / CLR SW17	
S5			CH-DOWN SW18	CH-UP SW6
S6			POWER SW19	SR SW7
S7			SHIFT (-) SW20	SHIFT (+) SW8
S8			TIMER REC SW21	VPS REC SW9
S9	PRESET SW38		TIM / COUNT SW22	COUNT MEM SW10
S10			TU MEM SW23	AUTO SCAN SW11
S11				TIM MODE SW12

2-5. TUNER/IF BLOCK DIAGRAM (N9055G)

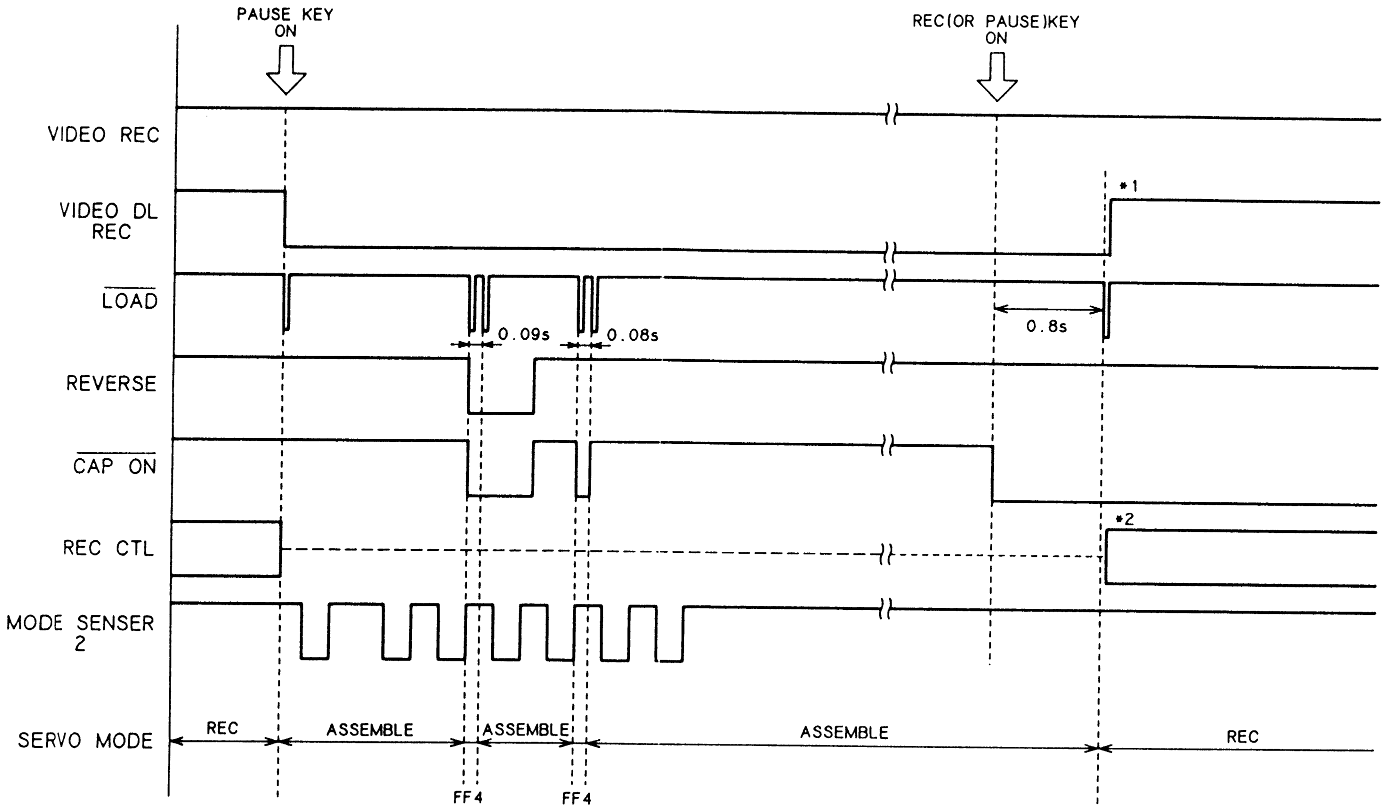

ANT.IN
RF OUT
BOOSTER
RF MODULATOR
30ch ~ 39ch
ANT. IN
UHF/VHF COMBINATION TUNER
UB
TU
HB
AGC
LB
AFT
MB
IF
12V
IC 1
LA7530
FL 2
DISCRI
FM DET
LIMITER AMP
MUTE
IF AGC NC
B/W NC
VIF AMP
VIDEO DET
RF AGC
AFT
FL 3
FILTER
12V
FL 4
TRAP
DE-EMPH
TP105
AUDIO OUT
TP104
VIDEO OUT
VIDEO EQ
SYNC SEPA
IC103
LA7210
To JACK TERMINAL
CN103
3 AUDIO OUT
To JACK TERMINAL
CN103
1 VIDEO OUT
To VPS DECODER
CN107
2 VIDEO OUT
T 1
LLD
T 2
AFT
5V
FL 1
38.9MHz
VR101
RF AGC
IC101
LA7910
Vcc
Band SW
Vcc2
VL
VH
U
AFT
12V
EP ROM
CN106
IC102
M58655P
To TIMER/FUNC
CN105
1 AFT-H
2 AFT-L
3 SYNC
8 BAND DATA 2
9 BAND DATA 1
5 PWM
To REG
CN104
REG 12V 1
EVER 50V 2
12V
32V REG
ZD101
μPD574J
TU
LPF
DC AMP
TR105

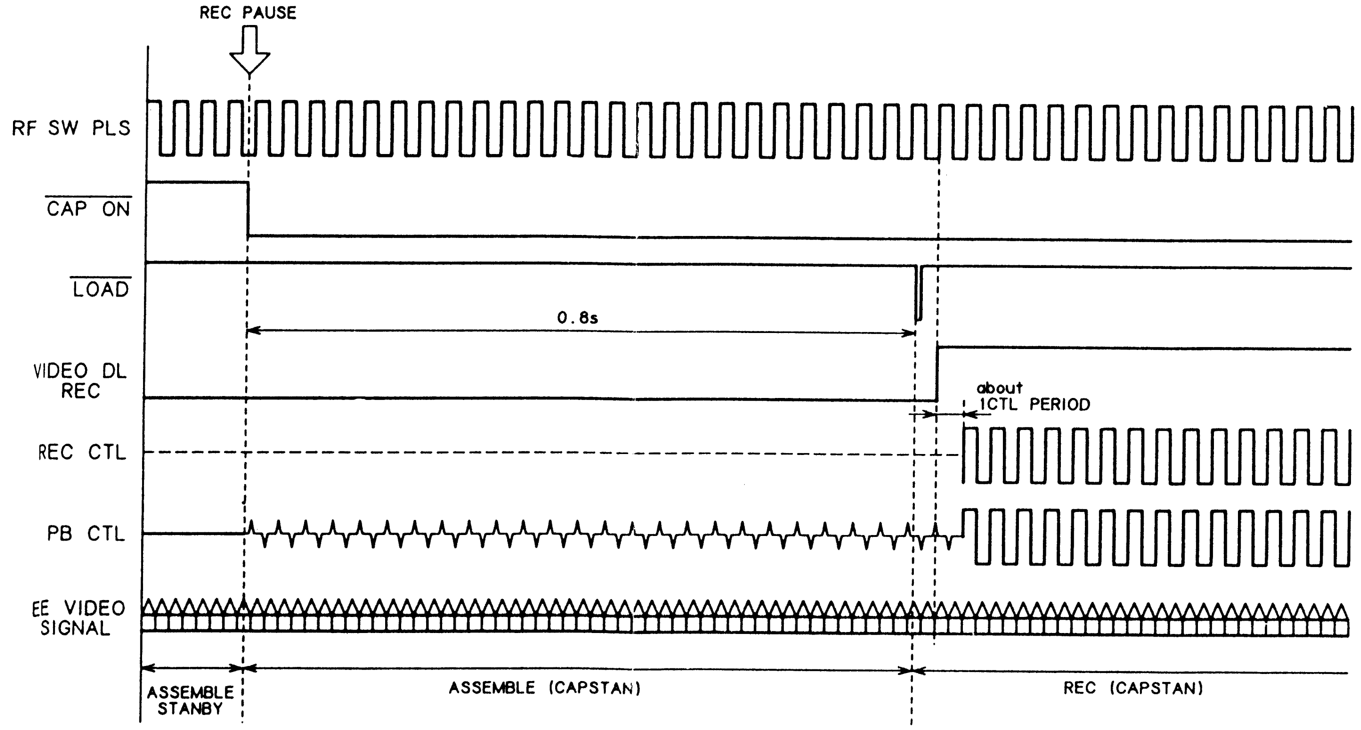
3. TIMING CHART

3-1. SYSTEM CONTROL TIMING CHART (N9055G)

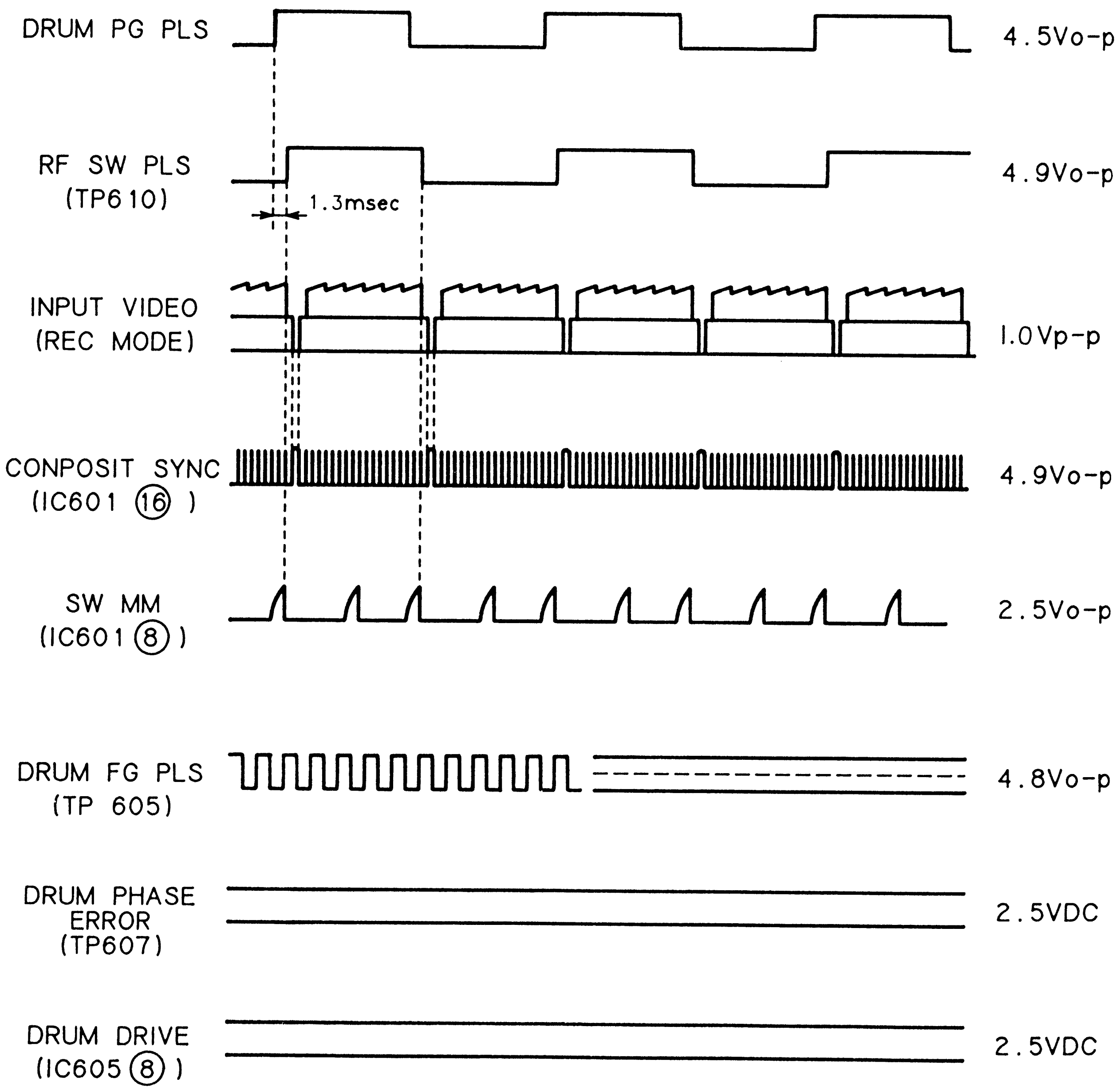


3-2. ASSEMBLE RECORD TIMING CHART (N9055G)

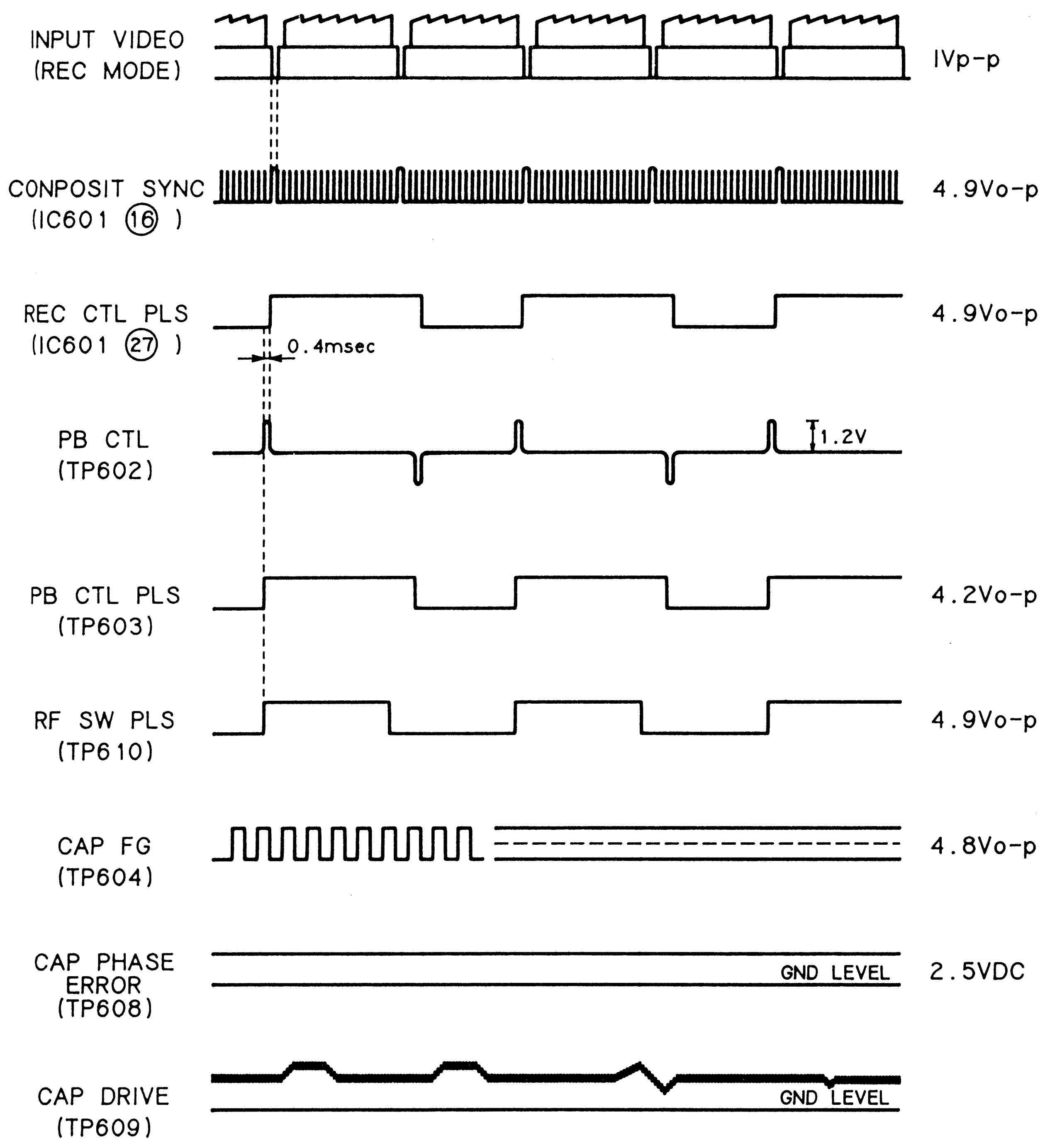

PAUSE KEY ON
REC(OR PAUSE)KEY ON
VIDEO REC
VIDEO DL REC
LOAD
REVERSE
CAP ON
REC CTL
MODE SENSER 2
SERVO MODE
*1
*2
0.09s
0.08s
0.8s
REC
ASSEMBLE
ASSEMBLE
ASSEMBLE
REC
FF4
FF4


REC PAUSE
RF SW PLS
CAP ON
LOAD
0.8s
VIDEO DL REC
about 1CTL PERIOD
REC CTL
PB CTL
EE VIDEO SIGNAL
ASSEMBLE STANBY
ASSEMBLE (CAPSTAN)
REC (CAPSTAN)

3-3. DRUM SERVO TIMING CHART (N9055G)


DRUM PG PLS
4.5Vo-p
RF SW PLS (TP610)
1.3msec
4.9Vo-p
INPUT VIDEO (REC MODE)
1.0Vp-p
CONPOSIT SYNC (IC601 ⑯)
4.9Vo-p
SW MM (IC601 ⑧)
2.5Vo-p
DRUM FG PLS (TP 605)
4.8Vo-p
DRUM PHASE ERROR (TP607)
2.5VDC
DRUM DRIVE (IC605 ⑧)
2.5VDC

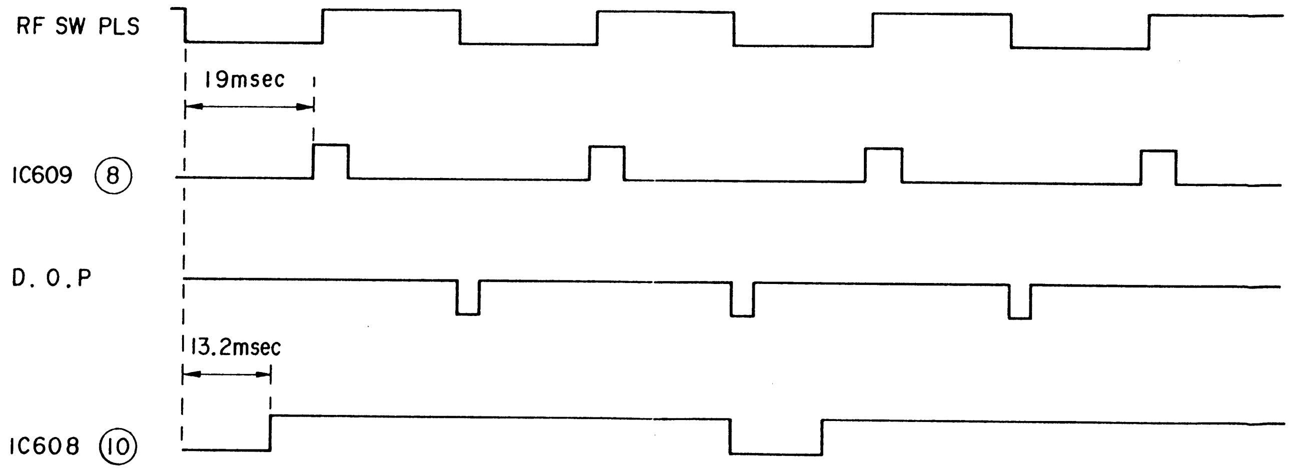
3-4. CAPSTAN SERVO TIMING CHART (N9055G)


INPUT VIDEO
(REC MODE)
IVp-p
CONPOSIT SYNC
(IC601 ⑯)
4.9Vo-p
REC CTL PLS
(IC601 ㉗)
4.9Vo-p
0.4msec
PB CTL
(TP602)
1.2V
PB CTL PLS
(TP603)
4.2Vo-p
RF SW PLS
(TP610)
4.9Vo-p
CAP FG
(TP604)
4.8Vo-p
CAP PHASE
ERROR
(TP608)
GND LEVEL
2.5VDC
CAP DRIVE
(TP609)
GND LEVEL

3-5. PARAMETERS (N9055G)

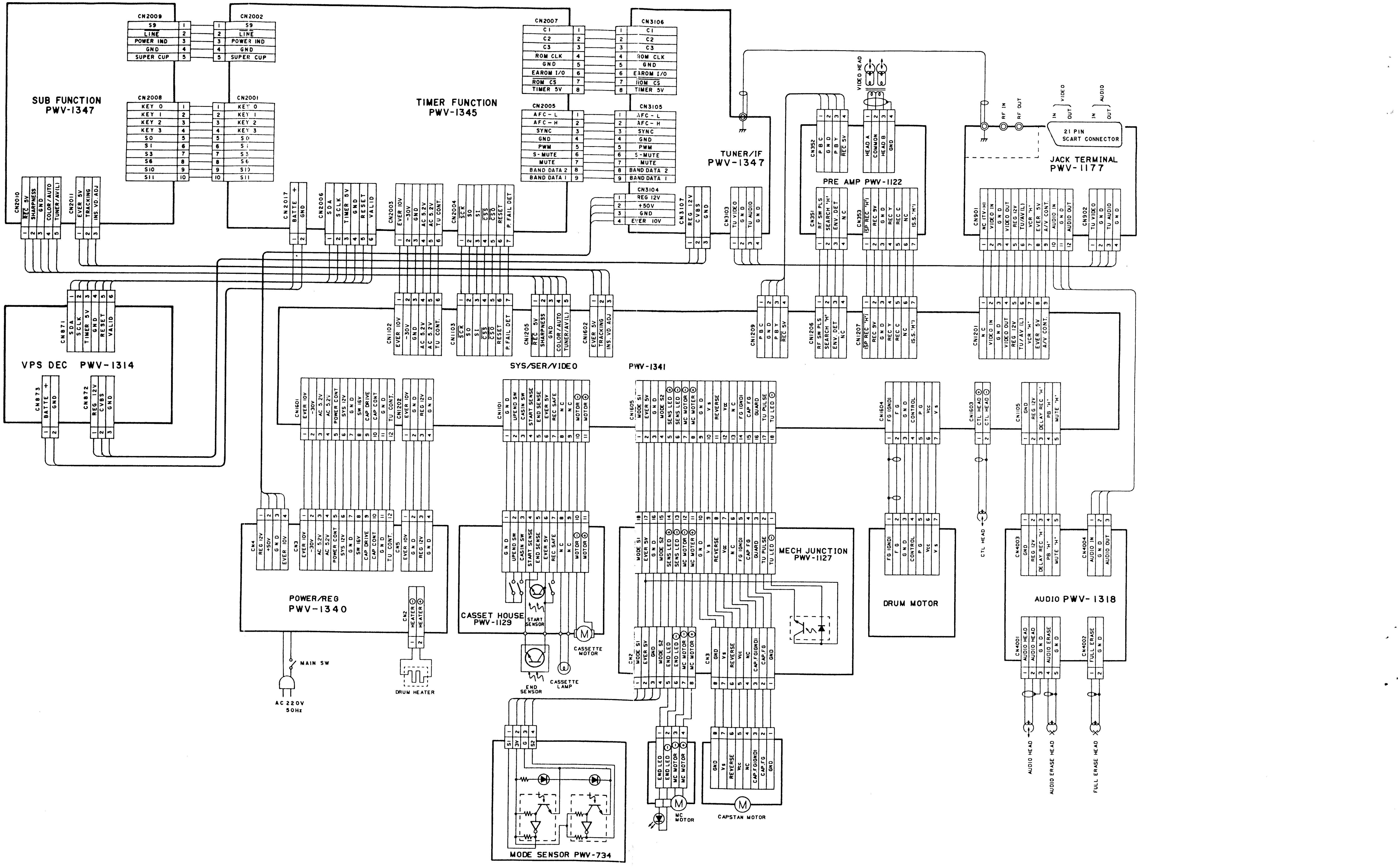
	PARAMETER MODE	RF SW PLS Frequency (Hz)	DRUM FG Frequency (Hz)	CAPSTAN FG Frequency (Hz)	CAPSTAN DRIVE Voltage (Vlot. DC)
SP	REC NORMAL P.B.	24.99	499.87	504.6	3.2
	CUE	25.73	514.64	3637	6.9
	REVIW	24.07	481.02	3401	6.8
	JET-CUE	26.25	525.02	5830	9.6
	JET-REVIEW	23.63	472.60	5248	9.1
	STILL	24.87	497.43	0 (Motor stop)	0

3-6. AUTOMATIC NOISE FEEDING (N9055G)

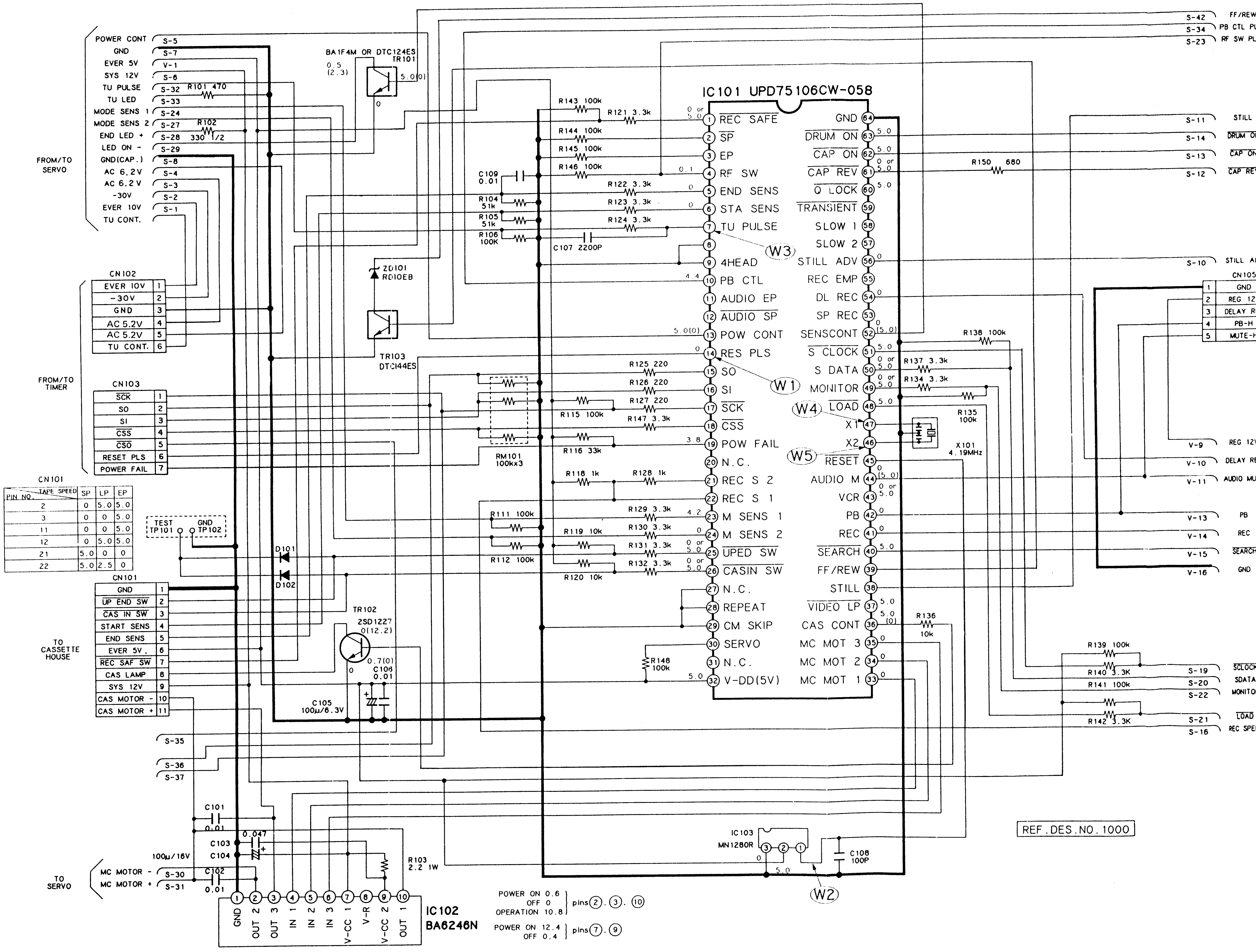

RF SW PLS
19msec
IC609 ⑧
D.O.P
13.2msec
IC608 ⑩

4. SCHEMATIC/CIRCUIT BOARD DIAGRAMS

4-1. FRAME WIRING (N9055G)

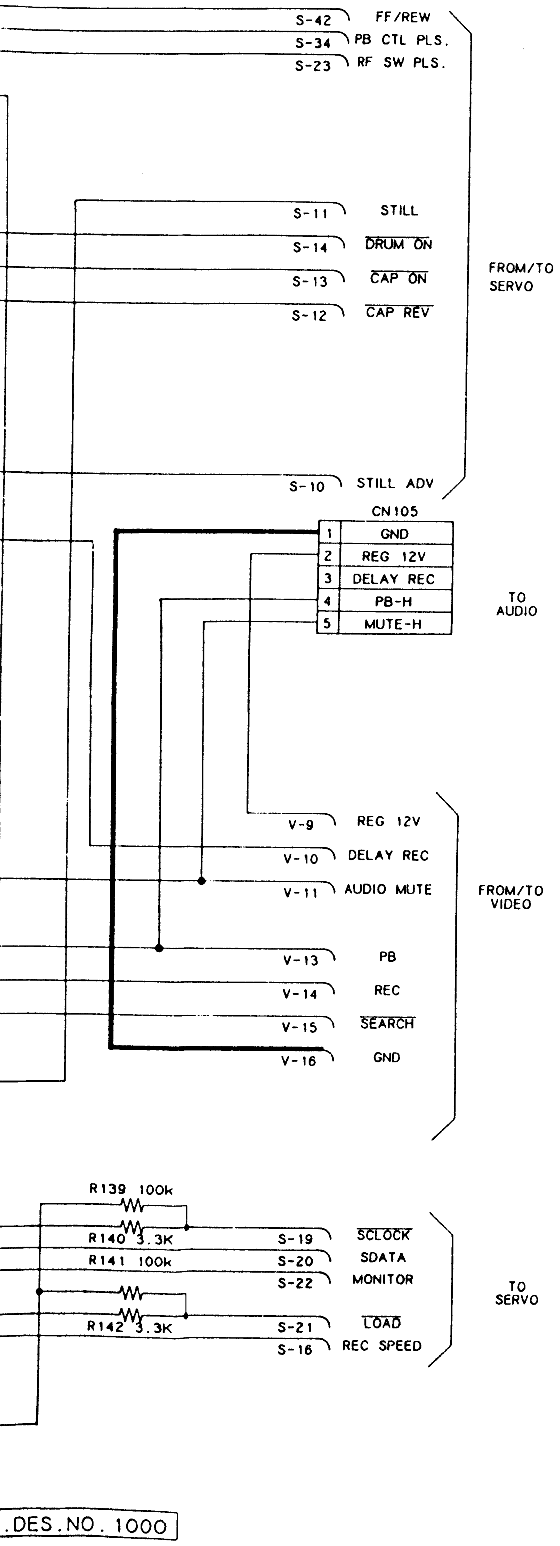

SUB FUNCTION PWV-1347
CN2009
S9
LINE
POWER IND
GND
SUPER CUP
CN2008
KEY 0
KEY 1
KEY 2
KEY 3
S0
S1
S3
S6
S10
S11
CN2002
CN2001
TIMER FUNCTION PWV-1345
CN2007
C1
C2
C3
ROM CLK
GND
EAROM I/O
ROM CS
TIMER 5V
CN3106
CN2005
AFC-L
AFC-H
SYNC
PWM
S-MUTE
MUTE
BAND DATA 2
BAND DATA 1
CN3105
CN3104
REG 12V
+50V
EVER 10V
CN2010
REC 5V
SHARPNESS
COLOR/AUTO
TUNER/AV(L)
CN2011
EVER 5V
TRACKING
INS. VD. ADJ
CN2017
BATTE +
CN2006
SDA
SCLK
TIMER 5V
RESET
VALID
CN2003
-30V
AC 5.2V
TU CONT.
CN2004
SCK
CSS
CS0
P.FAIL DET
TUNER/IF PWV-1347
CN3107
CN3103
TU VIDEO
TU AUDIO
VIDEO HEAD
PRE AMP PWV-1122
CN352
PBC
PBY
HEAD A
COMMON
HEAD B
CN351
RF SW PLS
SEARCH "H"
ENV. DET
NC
CN353
(SP) REC "H"
REC 9V
REC Y
REC C
(S.S. "H")
21 PIN SCART CONNECTOR
RF IN
RF OUT
IN
OUT
VIDEO
AUDIO
JACK TERMINAL PWV-1177
CN901
NC (TV-H)
VIDEO IN
VIDEO OUT
REG 12V
TU/AV(L)
VCR "H"
A/V CONT.
AUDIO IN
AUDIO OUT
CN902
VPS DEC PWV-1314
CN871
CN873
CN872
CVBS
CN1102
CN1103
CN1205
CN1602
CN1209
CN1206
CN1207
CN1201
SYS/SER/VIDEO
PWV-1341
CN1601
POWER CONT
SYS 12V
SW 16V
CAP DRIVE
CAP CONT
CN1202
CN1101
UPEND SW
CASIN SW
START SENSE
END SENSE
REC SAFE
MOTOR ⊕
MOTOR ⊖
CN1605
MODE S1
MODE S2
SENS LED ⊕
SENS LED ⊖
MC MOTER ⊕
MC MOTER ⊖
REVERSE
Vcc
FG (GND)
CAP FG
GUARD
TU PULSE
TU LED
CN1604
FG
CONTROL
PG
Vs
CN1603
CTL HEAD ⊕
CTL HEAD ⊖
CN1105
DELAY REC "H"
PB "H"
MUTE "H"
CN4
CN3
CN5
POWER/REG PWV-1340
CN2
HEATER
MAIN SW
AC 220V 50Hz
DRUM HEATER
CASSET HOUSE PWV-1129
START SENSOR
END SENSOR
CASSETTE LAMP
CASSETTE MOTOR
MECH JUNCTION PWV-1127
END LED
MC MOTOR
DRUM MOTOR
CTL HEAD
CN4003
CN4004
AUDIO PWV-1318
CN4001
AUDIO HEAD
AUDIO ERASE
CN4002
FULL ERASE
AUDIO ERASE HEAD
FULL ERASE HEAD
MODE SENSOR PWV-734
MC MOTOR
CAPSTAN MOTOR
CAP.FG(GND)
M

4-2. SYSCON SCHEMATIC DIAGRAM (N9055G)

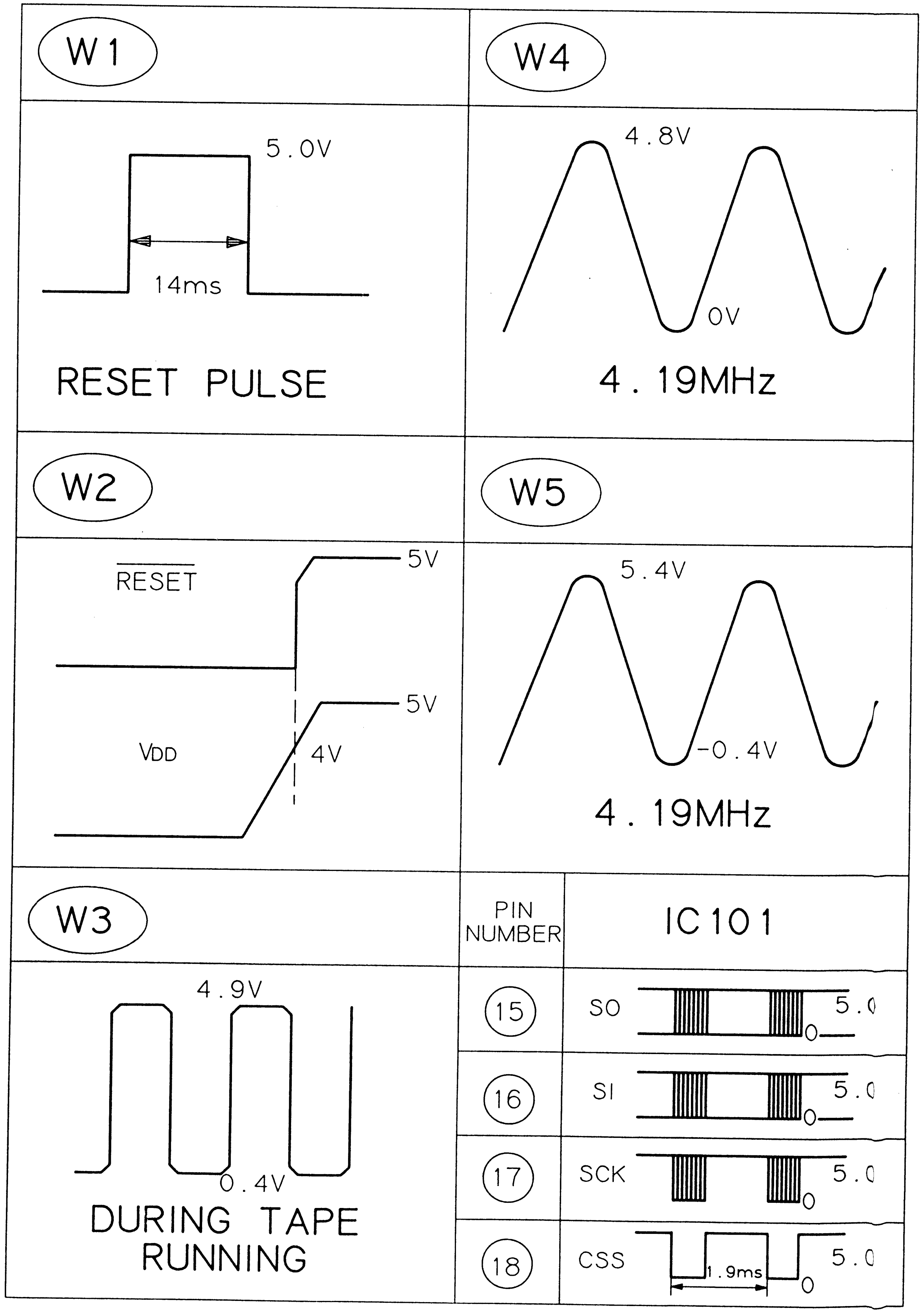

IC101 UPD75106CW-058
REC SAFE
SP
EP
RF SW
END SENS
STA SENS
TU PULSE
4HEAD
PB CTL
AUDIO EP
AUDIO SP
POW CONT
RES PLS
SO
SI
SCK
CSS
POW FAIL
N.C.
REC S 2
REC S 1
M SENS 1
M SENS 2
UPED SW
CASIN SW
N.C.
REPEAT
CM SKIP
SERVO
N.C.
V-DD(5V)
GND
DRUM ON
CAP ON
CAP REV
Q LOCK
TRANSIENT
SLOW 1
SLOW 2
STILL ADV
REC EMP
DL REC
SP REC
SENSCONT
S CLOCK
S DATA
MONITOR
LOAD
X1
X2
RESET
AUDIO M
VCR
PB
REC
SEARCH
FF/REW
STILL
VIDEO LP
CAS CONT
MC MOT 3
MC MOT 2
MC MOT 1
W1
W2
W3
W4
W5
FROM/TO SERVO
POWER CONT
GND
EVER 5V
SYS 12V
TU PULSE
TU LED
MODE SENS 1
MODE SENS 2
END LED +
LED ON -
GND(CAP.)
AC 6.2V
AC 6.2V
-30V
EVER 10V
TU CONT.
S-5
S-7
V-1
S-6
S-32
S-33
S-24
S-27
S-28
S-29
S-8
S-4
S-3
S-2
S-1
R101 470
R102 330 1/2
BA1F4M OR DTC124ES TR101
0.5 (2.3)
5.0(0)
CN102
EVER 10V
-30V
GND
AC 5.2V
AC 5.2V
TU CONT.
ZD101 RD10EB
TR103 DTC144ES
FROM/TO TIMER
CN103
SCK
SO
SI
CSS
CSO
RESET PLS
POWER FAIL
TEST TP101
GND TP102
D101
D102
TR102 2SD1227
0(12.2)
0.7(0)
C106 0.01
C105 100μ/6.3V
TO CASSETTE HOUSE
CN101
GND
UP END SW
CAS IN SW
START SENS
END SENS
EVER 5V.
REC SAF SW
CAS LAMP
SYS 12V
CAS MOTOR -
CAS MOTOR +
S-35
S-36
S-37
C101 0.01
C103 0.047
C104 100μ/16V
C102 0.01
R103 2.2 1W
TO SERVO
MC MOTOR -
MC MOTOR +
S-30
S-31
IC102 BA6246N
GND
OUT 2
OUT 3
IN 1
IN 2
IN 3
V-CC 1
V-R
V-CC 2
OUT 1
POWER ON 0.6
OFF 0
OPERATION 10.8
pins②.③. ⑩
POWER ON 12.4
OFF 0.4
pins⑦.⑨
R143 100k
R121 3.3k
R144 100k
R145 100k
R146 100k
C109 0.01
R122 3.3k
R123 3.3k
R124 3.3k
R104 51k
R105 51k
R106 100K
C107 2200P
R125 220
R126 220
R127 220
R147 3.3k
R115 100k
R116 33k
RM101 100kx3
R118 1k
R128 1k
R129 3.3k
R130 3.3k
R131 3.3k
R132 3.3k
R111 100k
R119 10k
R112 100k
R120 10k
R148 100k
IC103 MN1280R
C108 100P
R150 680
R138 100k
R137 3.3k
R134 3.3k
R135 100k
X101 4.19MHz
R136 10k
R139 100k
R140 3.3K
R141 100k
R142 3.3K
S-42
S-34
S-23
FF/REW
PB CTL P
RF SW P
S-11
S-14
S-13
S-12
STILL
DRUM O
CAP ON
CAP RE
S-10
STILL A
CN105
GND
REG 12
DELAY R
PB-H
MUTE-
V-9
V-10
V-11
REG 12
DELAY R
AUDIO MU
V-13
V-14
V-15
V-16
PB
REC
SEARCH
GND
S-19
S-20
S-22
S-21
S-16
SCLOCK
SDATA
MONITO
LOAD
REC SPE
REF.DES.NO.1000

CN101

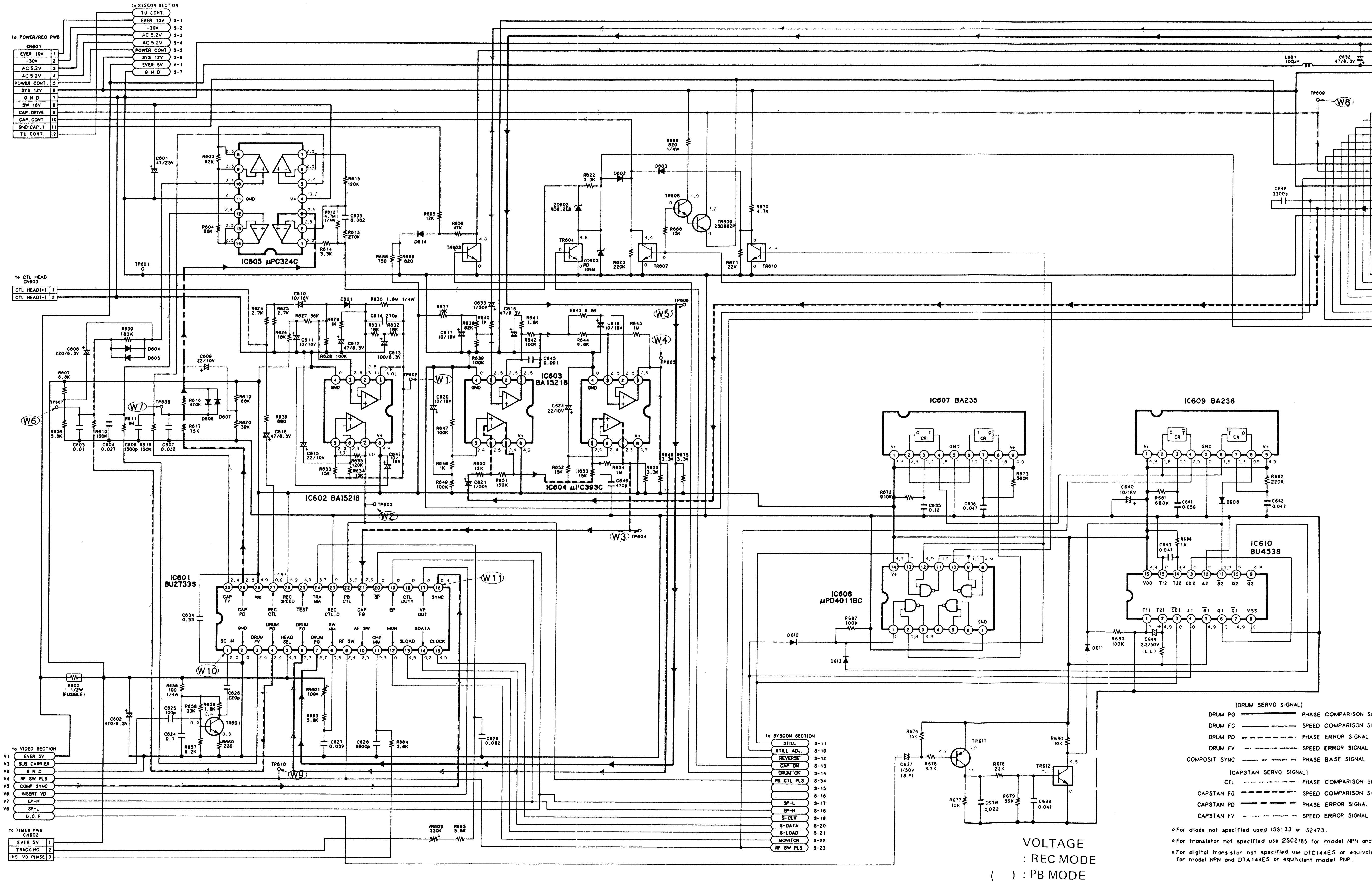
TAPE SPEED / PIN NO.	SP	LP	EP
2	0	5.0	5.0
3	0	0	5.0
11	0	0	5.0
12	0	5.0	5.0
21	5.0	0	0
22	5.0	2.5	0


S-42 FF/REW
S-34 PB CTL PLS.
S-23 RF SW PLS.
S-11 STILL
S-14 DRUM ON
S-13 CAP ON
S-12 CAP REV
FROM/TO SERVO
S-10 STILL ADV
CN105
1 GND
2 REG 12V
3 DELAY REC
4 PB-H
5 MUTE-H
TO AUDIO
V-9 REG 12V
V-10 DELAY REC
V-11 AUDIO MUTE
FROM/TO VIDEO
V-13 PB
V-14 REC
V-15 SEARCH
V-16 GND
R139 100k
R140 3.3K
R141 100k
R142 3.3K
S-19 SCLOCK
S-20 SDATA
S-22 MONITOR
S-21 LOAD
S-16 REC SPEED
TO SERVO
.DES.NO. 1000

SYSCON WAVEFORMS

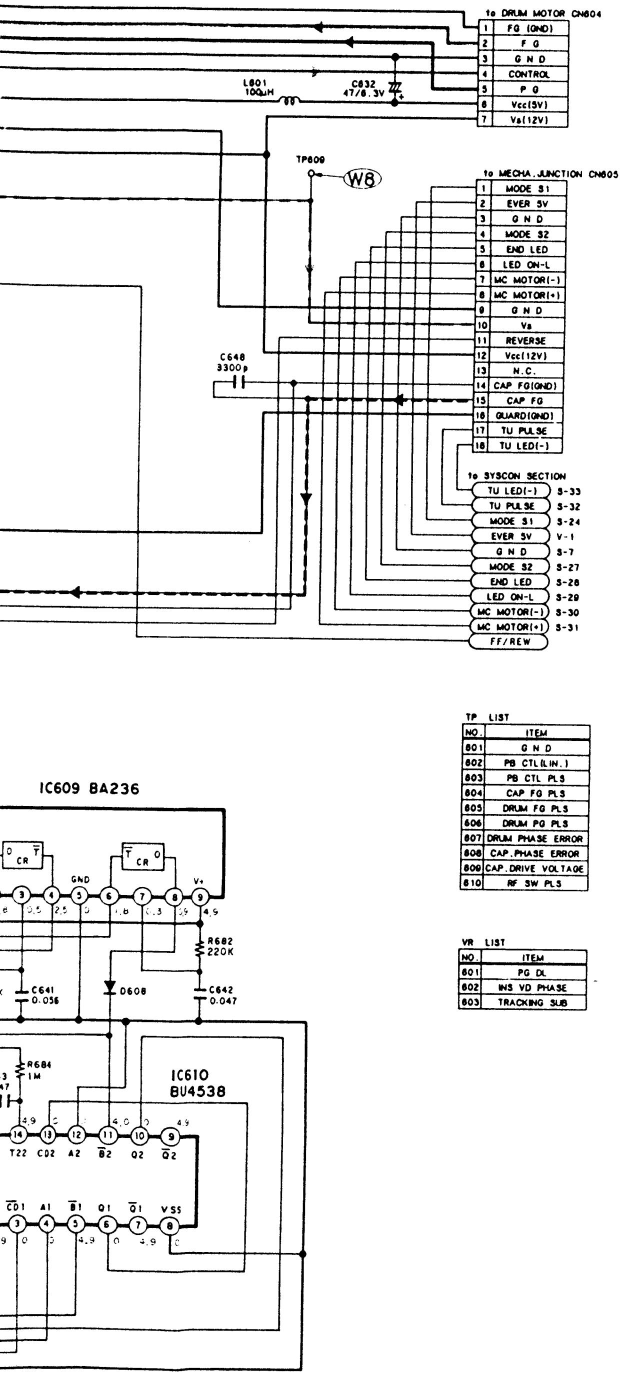

W1
5.0V
14ms
RESET PULSE
W4
4.8V
0V
4.19MHz
W2
RESET
5V
VDD
5V
4V
W5
5.4V
-0.4V
4.19MHz
W3
4.9V
0.4V
DURING TAPE RUNNING
PIN NUMBER
IC101
15
SO
16
SI
17
SCK
18
CSS
1.9ms
5.
0

4-3. SERVO SCHEMATIC DIAGRAM (N9055G)


to SYSCON SECTION
TU CONT.
EVER 10V S-1
-30V S-2
AC 5.2V S-3
AC 5.2V S-4
POWER CONT S-5
SYS 12V S-6
EVER 5V V-1
G N D S-7
to POWER/REG PWB
CN601
EVER 10V 1
-30V 2
AC 5.2V 3
AC 5.2V 4
POWER CONT. 5
SYS 12V 6
G N D 7
SW 16V 8
CAP. DRIVE 9
CAP. CONT 10
GND(CAP.) 11
TU CONT. 12
to CTL HEAD CN603
CTL HEAD(+) 1
CTL HEAD(-) 2
IC605 μPC324C
IC602 BA15218
IC603 BA15218
IC604 μPC393C
IC601 BU2733S
IC607 BA235
IC609 BA236
IC608 μPD4011BC
IC610 BU4538
TR601
TR603
TR604
TR607
TR608
TR609 2SD882P
TR610
TR611
TR612
TP601
TP602
TP603
TP604
TP605
TP606
TP607
TP608
TP609
TP610
W1
W2
W3
W4
W5
W6
W7
W8
W9
W10
W11
R602 1 1/2W (FUSIBLE)
to VIDEO SECTION
V1 EVER 5V
V3 SUB CARRIER
V2 G N D
V4 RF SW PLS
V5 COMP SYNC
V6 INSERT VD
V7 EP-H
V8 SP-L
D.O.P
to TIMER PWB CN602
EVER 5V 1
TRACKING 2
INS VD PHASE 3
to SYSCON SECTION
STILL S-11
STILL ADJ. S-10
REVERSE S-12
CAP ON S-13
DRUM ON S-14
PB CTL PLS S-34
S-15
S-16
SP-L S-17
EP-H S-18
S-CLK S-19
S-DATA S-20
S-LOAD S-21
MONITOR S-22
RF SW PLS S-23
[DRUM SERVO SIGNAL]
DRUM PG PHASE COMPARISON SI
DRUM FG SPEED COMPARISON SI
DRUM PD PHASE ERROR SIGNAL
DRUM FV SPEED ERROR SIGNAL
COMPOSIT SYNC PHASE BASE SIGNAL
[CAPSTAN SERVO SIGNAL]
CTL PHASE COMPARISON SI
CAPSTAN FG SPEED COMPARISON SI
CAPSTAN PD PHASE ERROR SIGNAL
CAPSTAN FV SPEED ERROR SIGNAL

VOLTAGE
: REC MODE
( ) : PB MODE

- For diode not specified used 1SS133 or 1S2473.
- For transistor not specified use 2SC2785 for model NPN and
- For digital transistor not specified use DTC144ES or equivale for model NPN and DTA144ES or equivalent model PNP.


to DRUM MOTOR CN604
1 FG (GND)
2 F G
3 G N D
4 CONTROL
5 P G
6 Vcc(5V)
7 Vs(12V)
L601 100μH
C632 47/6.3V
TP609
W8
to MECHA. JUNCTION CN605
1 MODE S1
2 EVER 5V
3 G N D
4 MODE S2
5 END LED
6 LED ON-L
7 MC MOTOR(-)
8 MC MOTOR(+)
9 G N D
10 Vs
11 REVERSE
12 Vcc(12V)
13 N.C.
14 CAP FG(GND)
15 CAP FG
16 GUARD(GND)
17 TU PULSE
18 TU LED(-)
C648 3300p
to SYSCON SECTION
TU LED(-) S-33
TU PULSE S-32
MODE S1 S-24
EVER 5V V-1
G N D S-7
MODE S2 S-27
END LED S-28
LED ON-L S-29
MC MOTOR(-) S-30
MC MOTOR(+) S-31
FF/REW
IC609 BA236
CR
GND
V+
R682 220K
C641 0.056
D608
C642 0.047
R684 1M
IC610 BU4538
T22 CD2 A2 B2 Q2 Q2
CD1 A1 B1 Q1 Q1 VSS

TP LIST

NO.	ITEM
601	G N D
602	PB CTL(LIN.)
603	PB CTL PLS
604	CAP FG PLS
605	DRUM FG PLS
606	DRUM PG PLS
607	DRUM PHASE ERROR
608	CAP. PHASE ERROR
609	CAP. DRIVE VOLTAGE
610	RF SW PLS

VR LIST

NO.	ITEM
601	PG DL
602	INS VD PHASE
603	TRACKING SUB

[DRUM SERVO SIGNAL]

DRUM PG	━━━━━━	PHASE COMPARISON SIGNAL
DRUM FG	――――――	SPEED COMPARISON SIGNAL
DRUM PD	– – – – – –	PHASE ERROR SIGNAL
DRUM FV	··········	SPEED ERROR SIGNAL
COMPOSIT SYNC	—— – —— –	PHASE BASE SIGNAL

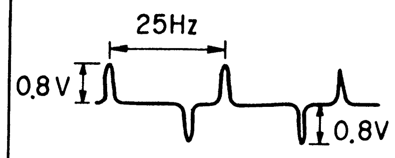
[CAPSTAN SERVO SIGNAL]

CTL	·········	PHASE COMPARISON SIGNAL
CAPSTAN FG	━ ━ ━ ━ ━	SPEED COMPARISON SIGNAL
CAPSTAN PD	━━ ━ ━━ ━	PHASE ERROR SIGNAL
CAPSTAN FV	··········	SPEED ERROR SIGNAL

- For diode not specified used ISS133 or IS2473.
- For transistor not specified use 2SC2785 for model NPN and 2SA1175 for model PNP.
- For digital transistor not specified use DTC144ES or equivalent for model NPN and DTA144ES or equivalent model PNP.

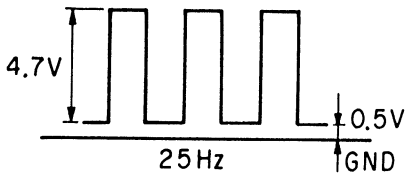
SERVO WAVEFORMS

W1


25Hz
0.8V
0.8V

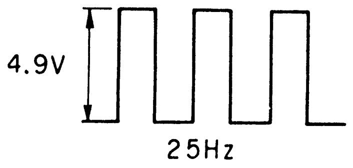
TP602 SP PB

W5


4.7V
0.5V
25Hz
GND

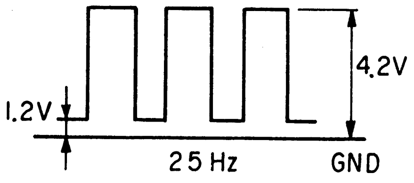
TP606 REC/PB

W9



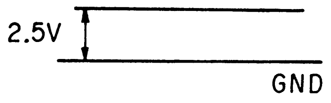
TP610 REC/PB

W2


4.2V
1.2V
25Hz
GND

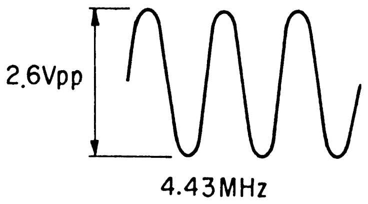
TP603 SP PB

W6



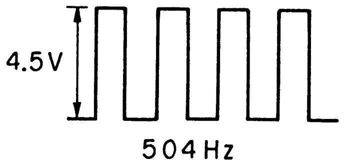
TP607 REC/PB

W10


2.6Vpp
4.43MHz

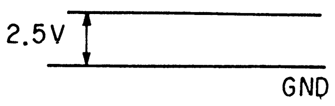
IC601 ① REC/PB

W3



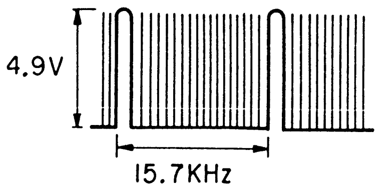
TP604 SP REC/PB

W7



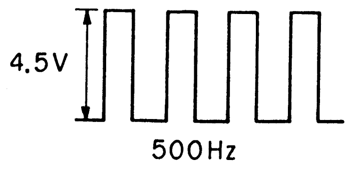
TP608 REC/PB

W11



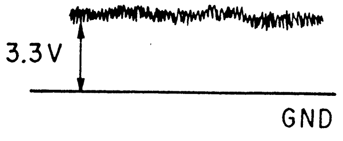
IC601 ⑯ REC/PB

W4



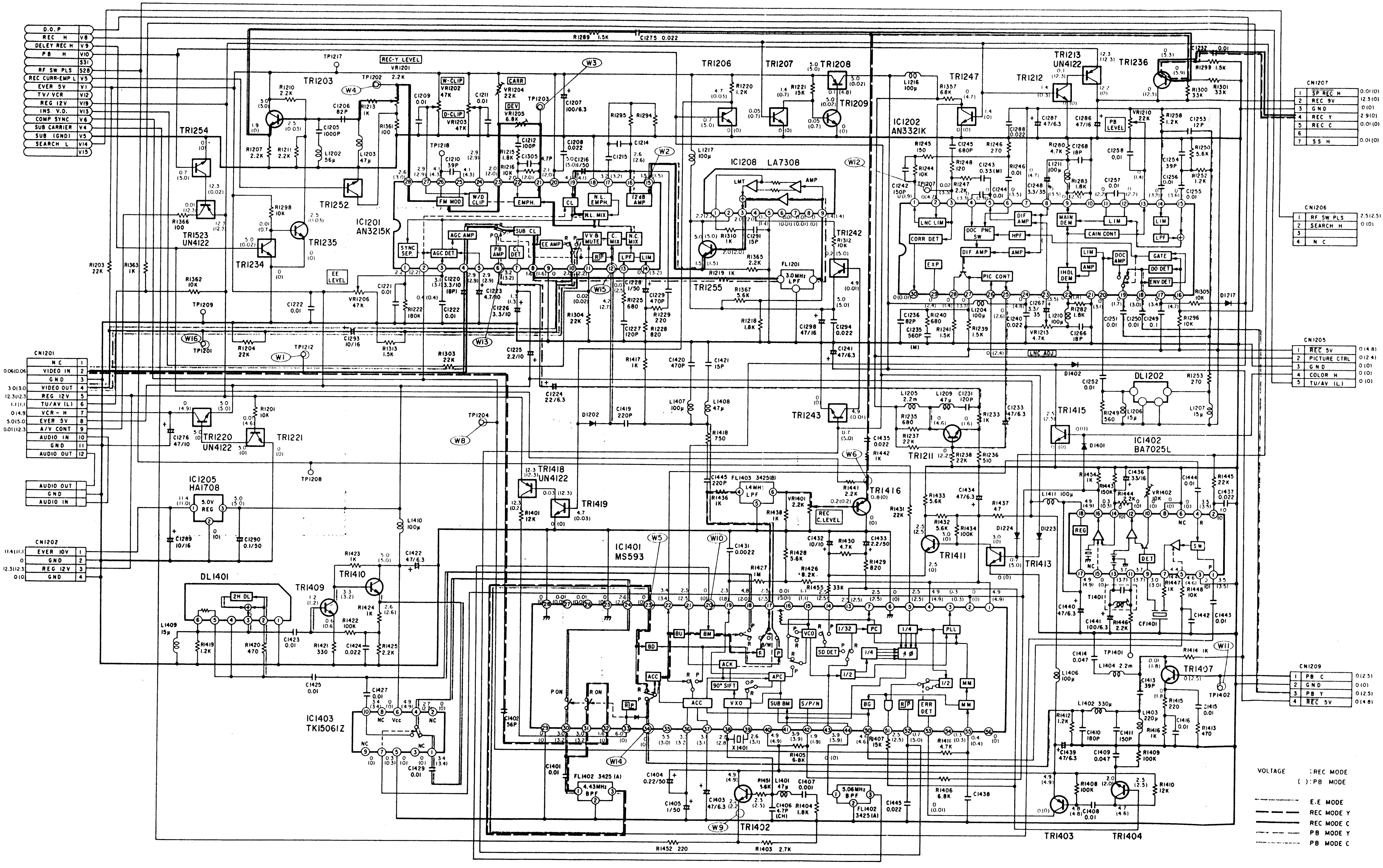
TP605 REC/PB

W8

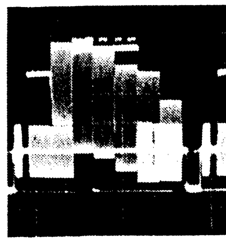


TP609 SP REC/PB

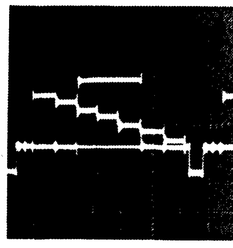
4-4. VIDEO/CHROMA SCHEMATIC DIAGRAM (N9055G)


CN1201
CN1202
CN1205
CN1206
CN1207
CN1209
D.O.P
REC H
DELEY REC H
PB H
RF SW PLS
REC CURR-EMP L
EVER 5V
TV/VCR
REG 12V
INS. V.D.
COMP SYNC
SUB CARRIER
SUB (GND)
SEARCH L
VIDEO IN
VIDEO OUT
AUDIO IN
AUDIO OUT
EVER 10V
IC1201 AN3215K
IC1202 AN3321K
IC1208 LA7308
IC1205 HA1708
IC1401 MS593
IC1402 BA7025L
IC1403 TK15061Z
DL1401
DL1202
FL1201 3.0MHz LPF
FL1402 3425 (A) 4.43MHz BPF
FL1402 3425 (A) 5.06MHz BPF
FL1403 3425(B) 1.4MHz LPF
TR1203
TR1206
TR1207
TR1208
TR1209
TR1212
TR1213 UN4122
TR1236
TR1247
TR1252
TR1254
TR1523 UN4122
TR1234
TR1235
TR1242
TR1243
TR1255
TR1211
TR1220 UN4122
TR1221
TR1409
TR1410
TR1411
TR1413
TR1415
TR1416
TR1418 UN4122
TR1419
TR1402
TR1403
TR1404
TR1407
REC-Y LEVEL VR1201
W-CLIP VR1202 47K
D-CLIP VR1203 47K
CARR VR1204 22K
DEV VR1205 6.8K
VR1206 47K
EE LEVEL
REC C.LEVEL
LNC ADJ
PB LEVEL
SYNC SEP.
AGC DET
AGC AMP
FM MOD
W/D CLIP
EMPH.
N.L. EMPH.
N.L. MIX
12dB AMP
SUB CL
EE AMP
PB AMP
CL DET
VV & MUTE
C MIX
N.C MIX
LPF
LIM
LMT
AMP
LNC LIM
CORR DET
DOC PNC SW
DIF AMP
HPF
PIC CONT
EXP
MAIN DEM
CAIN CONT
DOC AMP
GATE
DO DET
ENV DET
INHL DEM
BD
BU
BM
ACK
ACC
APC
VCO
1/32
PC
PLL
1/4
SD DET
1/2
90° SIFT
VXO
SUB BM
S/P/N
BG
RP
ERR DET
MM
REG
DET
SW
P ON
R ON
X1401
TP1201
TP1202
TP1203
TP1204
TP1208
TP1209
TP1212
TP1217
TP1218
TP1401
TP1402
W1
W2
W3
W4
W5
W6
W8
W9
W10
W11
W12
W13
W14
W15
W16
VOLTAGE : REC MODE
( ) : PB MODE
E-E MODE
REC MODE Y
REC MODE C
PB MODE Y
PB MODE C

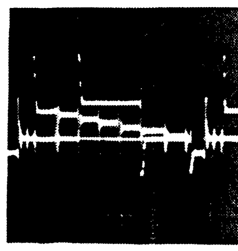
VIDEO WAVEFOR



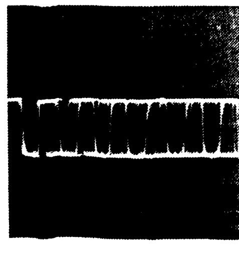
TP1212 REC
INPUT SIGNAL



IC1201 15 pin REC
LUMINANCE SIGNA



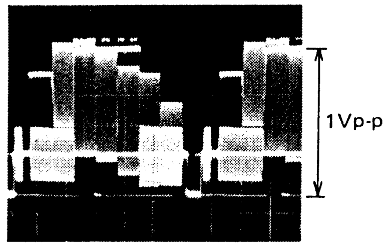
TP1203 REC
PR E EMPHASIS OUT



TP1201 REC
FM MODULATOR OU

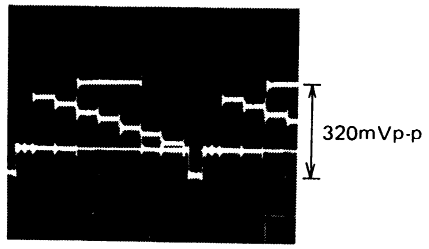
VIDEO WAVEFORMS

W1



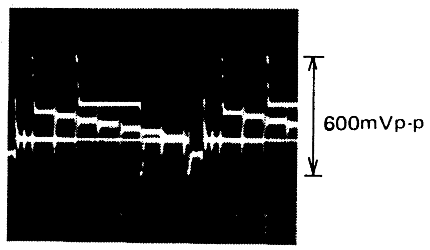
TP1212 REC
INPUT SIGNAL
X = 10μs
Y = 200mV

W2



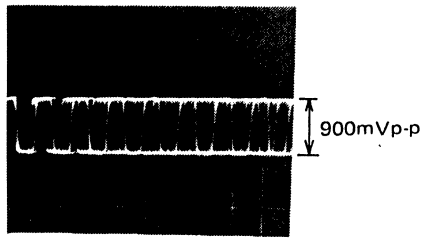
IC1201 15 pin REC
LUMINANCE SIGNAL
X = 10μs
Y = 100mV

W3



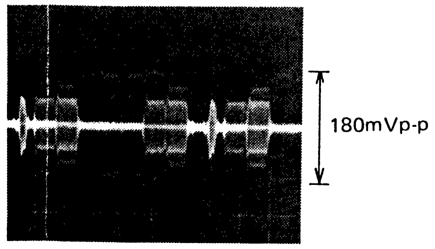
TP1203 REC
PRE EMPHASIS OUTPUT
X = 10μs
Y = 200mV

W4



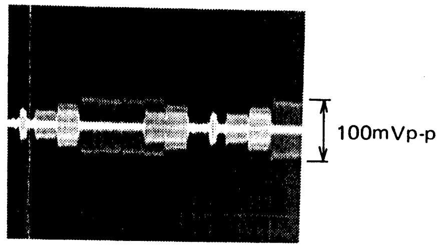
TP1201 REC
FM MODULATOR OUTPUT
X = 200ns
Y = 500mV

W5



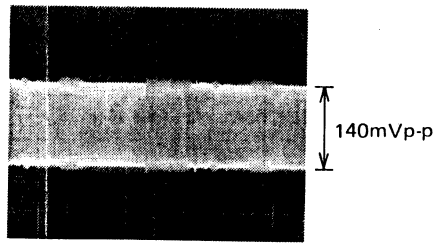
IC1401 25 pin REC
CHROMINANCE SIGNAL
X = 10μs
Y = 50mV

W6



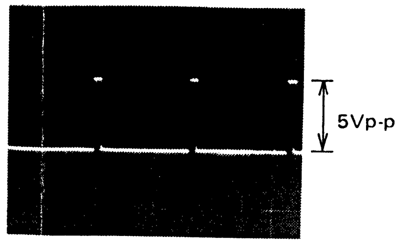
TR1416 Emitter REC
REC CONVERTED CHROMINANCE SIGNAL
X = 10μs
Y = 50mV

W7



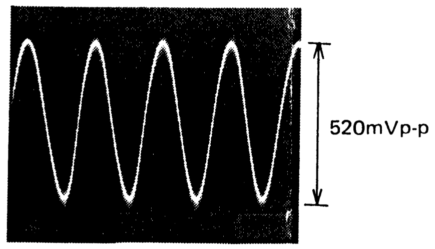
TP501 (PRE AMP) REC
REC FM SIGNAL
X = 10μs
Y = 50mV

W8



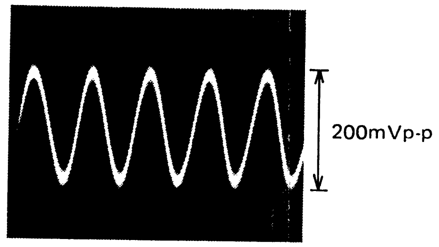
TP1204 REC
COMPOSITE SYNC PULSE
X = 20μs
Y = 2V

W9



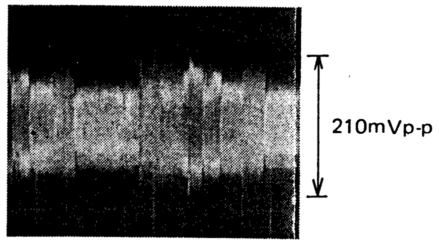
TR1402 Emitter REC
4.43 MHz VXO OUTPUT
X = 100ns
Y = 100mV

W10



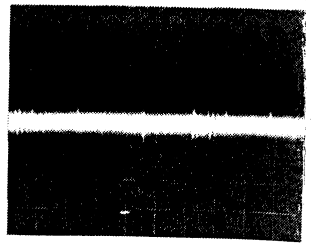
IC1401 20 pin REC
5.06 MHz MAIN CONVERTER INPUT
X = 100ms
Y = 50mV

W11



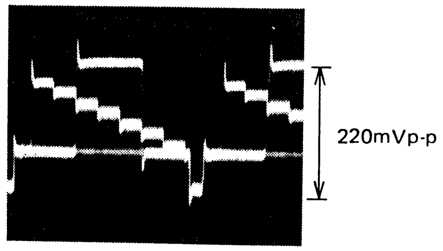
TP1402 PB
PB FM SIGNAL
X = 10μs
Y = 50mV

W12



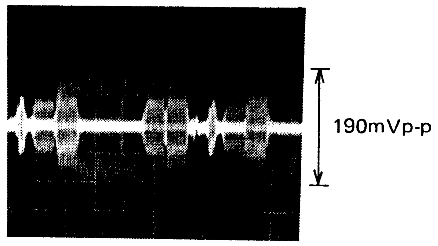
IC1201 6 pin PB
PB LUMINANCE SIGNAL
X = 10μs
Y = 50mV

W13



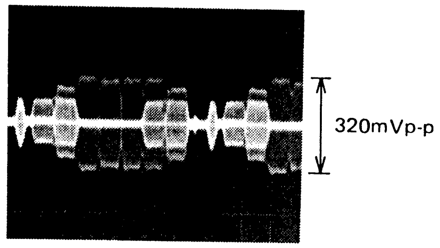
IC1401 34 pin PB
PB CONVERTED CHROMINANCE SIGNAL
X = 10μs
Y = 50mV

W14



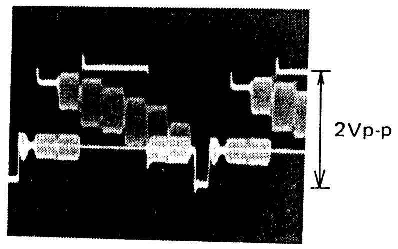
TP1207 PB
LINE NOISE CANCELAR CHECK POINT
X = 10μs
Y = 50mV

W15



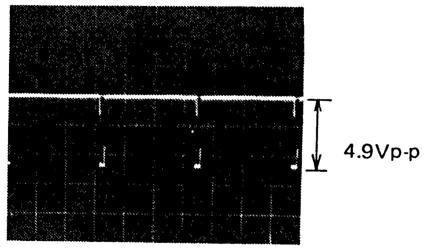
IC1201 12 pin PB
PB CHROMINANCE SIGNAL
X = 10μs
Y = 100mV

W16



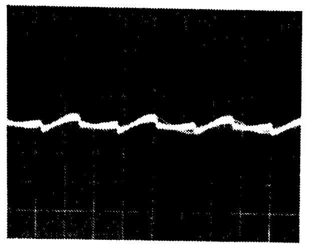
TP1201 PB
PB VIDEO SIGNAL
X = 10μs
Y = 500mV

W17



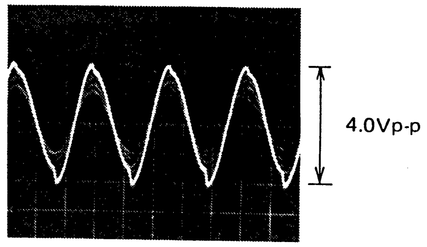
IC1401 55 pin REC
BURST GATE PULSE
X = 20μs/DIV.
Y = 2V/DIV.

W18



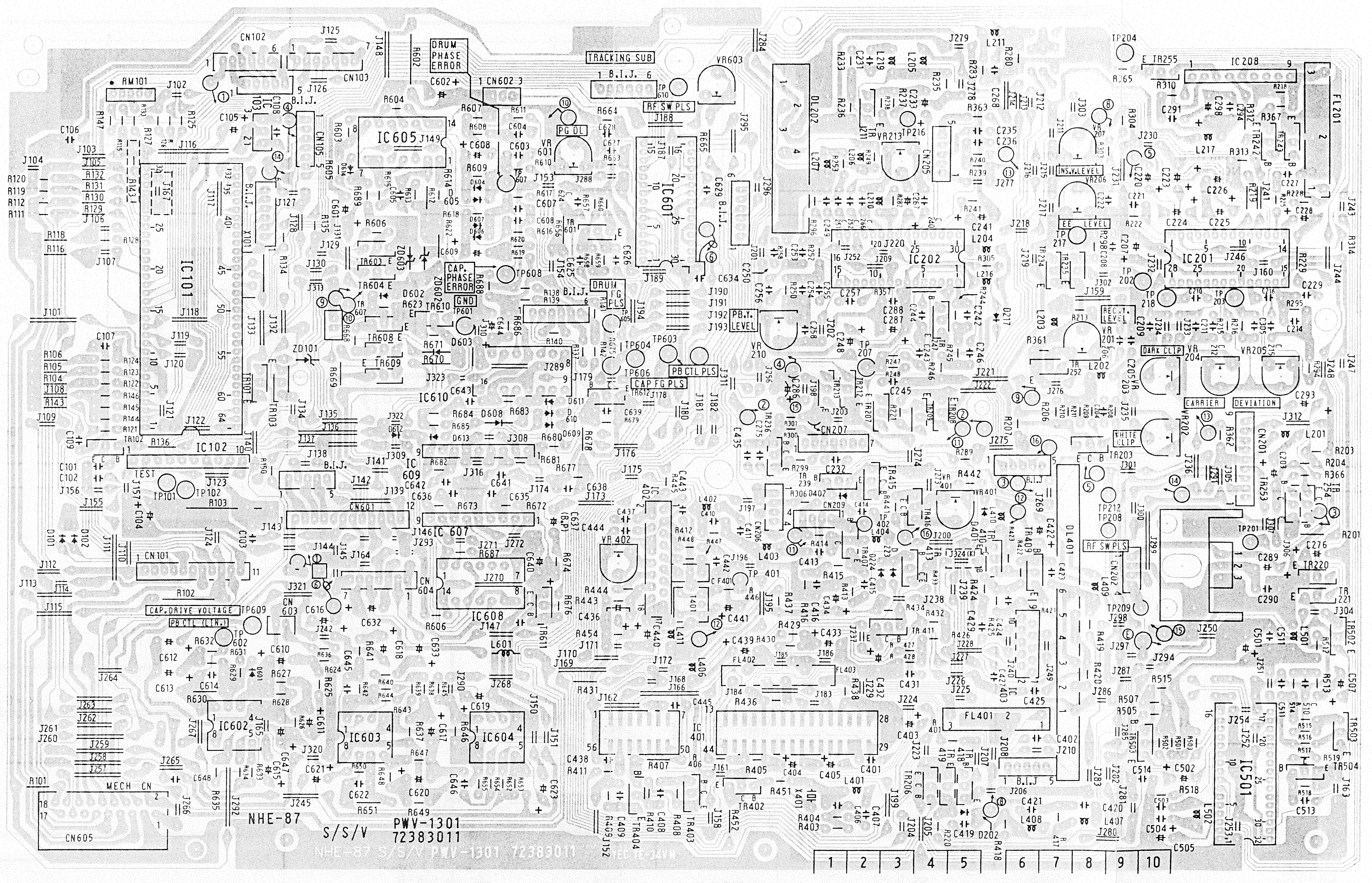
TP1401 REC (PAL)
SECAM DETECTOR
X = 50μs/DIV.
Y = 1V/DIV.

W19

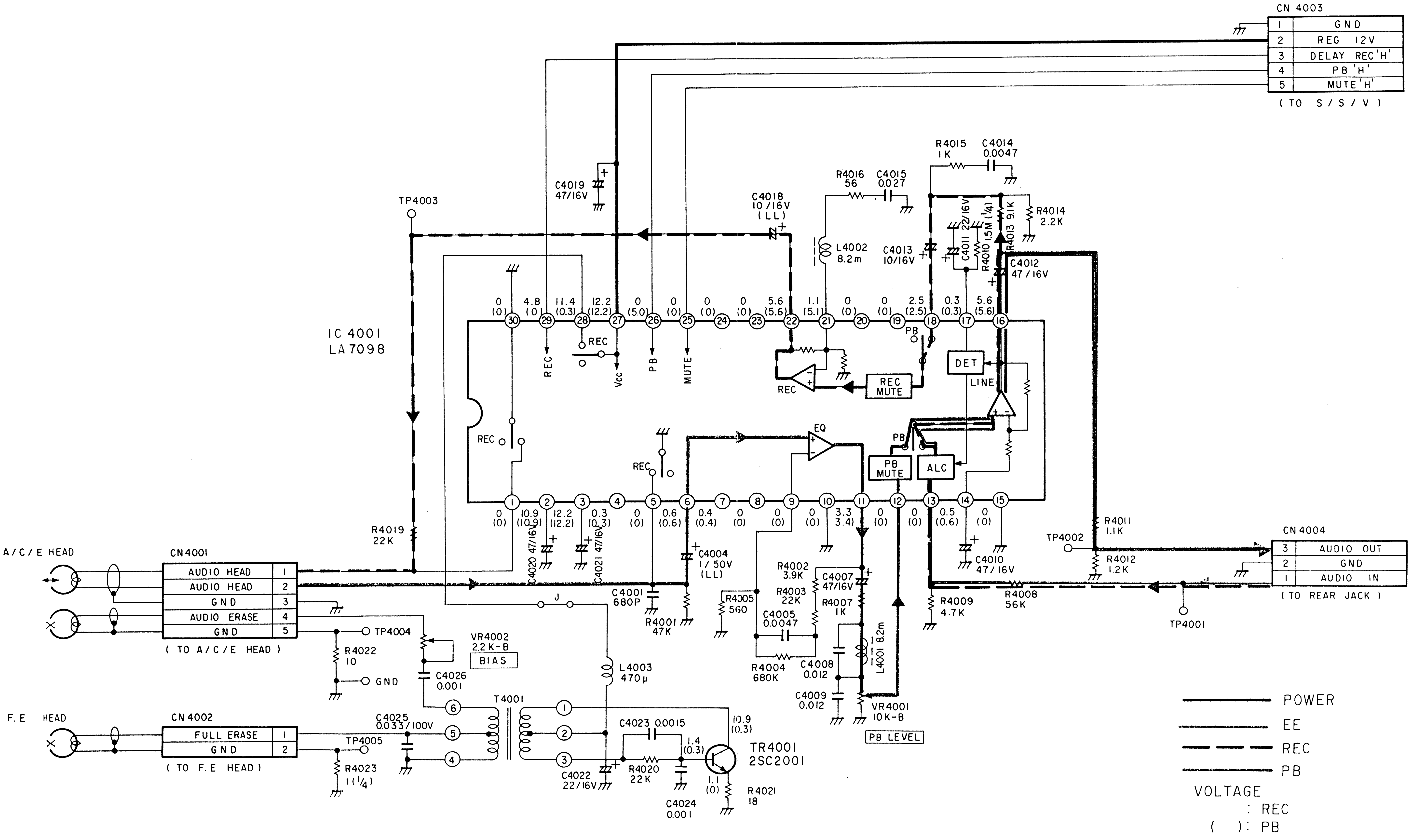


TP1401 REC (SECAM)
SECAM DETECTOR
X = 50μs/DIV.
Y = 1V/DIV.

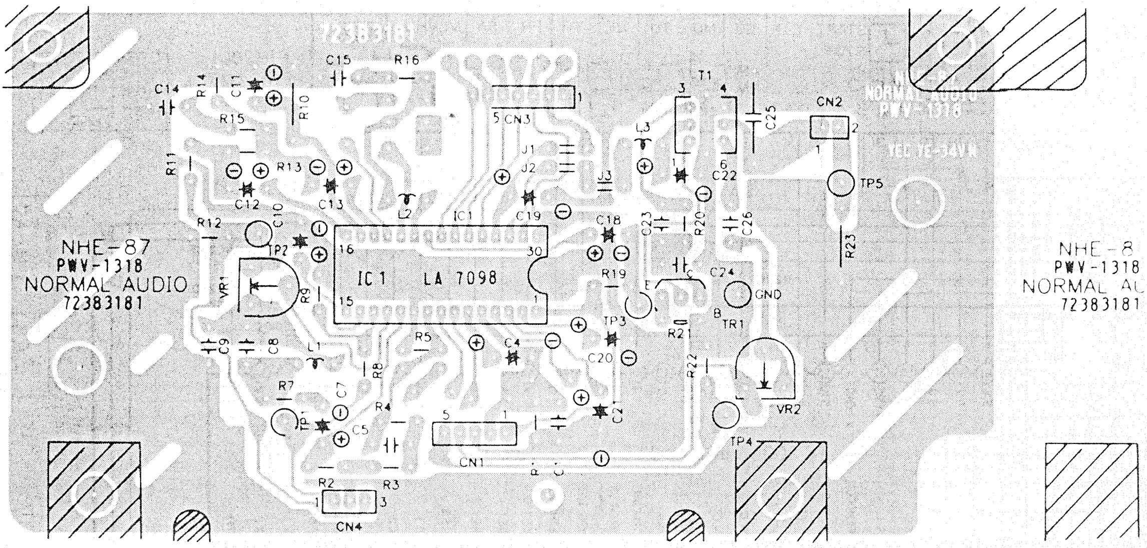
4-5. SYSCON/SERVO/VIDEO CIRCUIT BOARD (SOLDER SIDE) (N9055G)


NHE-87
S/S/V
PWV-1301
72383011
IC101
IC102
IC201
IC202
IC208
IC401
IC501
IC601
IC602
IC603
IC604
IC605
IC607
IC608
IC609
DRUM PHASE ERROR
CAP. PHASE ERROR
TRACKING SUB
RF SW PLS
PG DL
DRUM FG PLS
PB.Y. LEVEL
PB CTL PLS
CAP FG PLS
CAP. DRIVE VOLTAGE
PB CTL (LIN.)
GND
INS.V.LEVEL
EE LEVEL
REC.Y. LEVEL
DARK CLIP
CARRIER
DEVIATION
WHITE CLIP
TEST
MECH CN
1
2
3
4
5
6
7
8
9
10

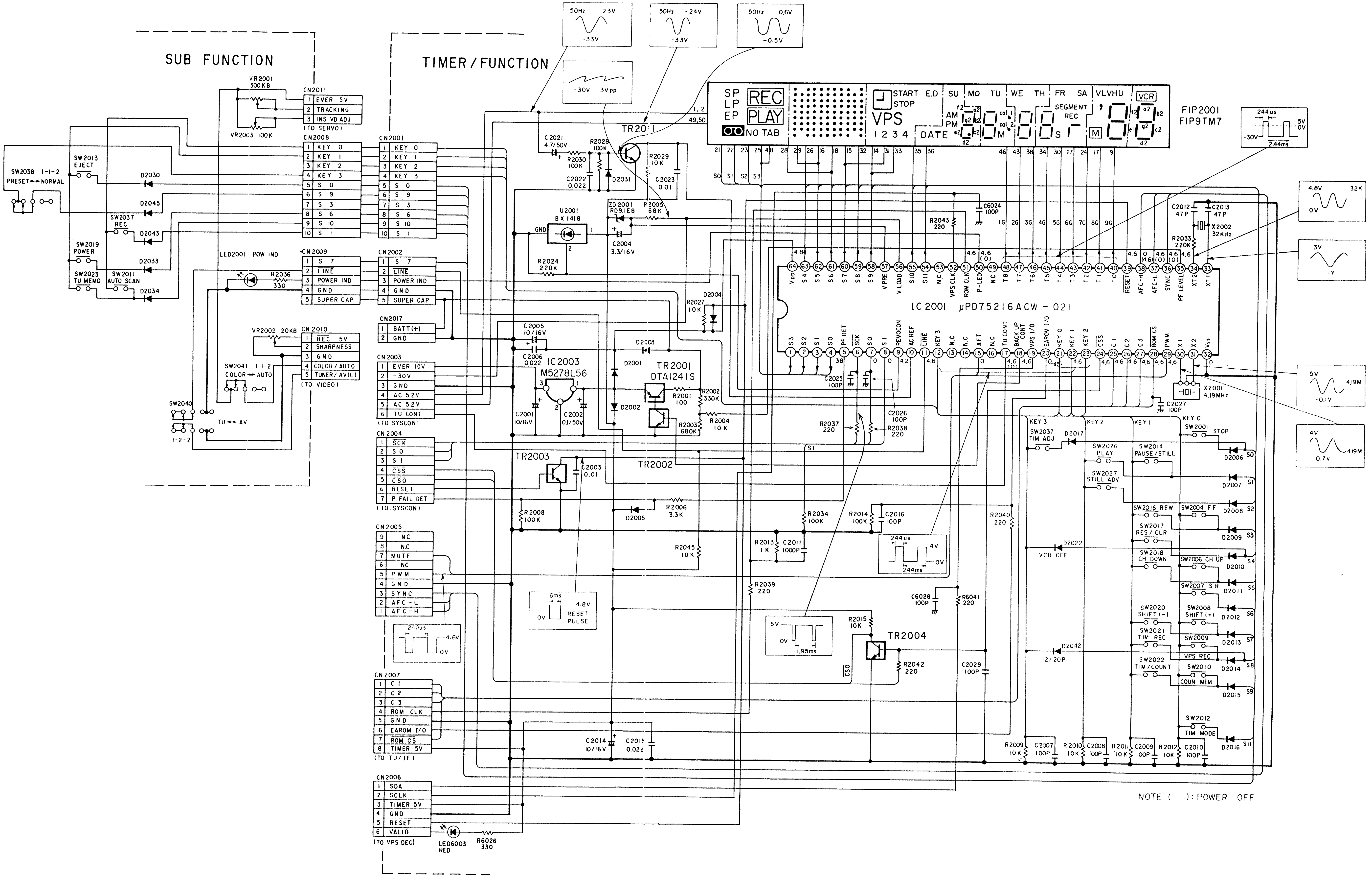
4-6. AUDIO SCHEMATIC DIAGRAM (N9055G)


CN 4003
1 GND
2 REG 12V
3 DELAY REC'H'
4 PB'H'
5 MUTE'H'
(TO S/S/V)
R4015 1K
C4014 0.0047
R4016 56
C4015 0.027
C4018 10/16V (LL)
C4019 47/16V
TP4003
L4002 8.2m
C4013 10/16V
C4011 22/16V
R4010 1.5M (1/4)
R4013 9.1K
R4014 2.2K
C4012 47/16V
IC 4001
LA7098
REC
Vcc
PB
MUTE
REC MUTE
DET
LINE
EQ
PB MUTE
ALC
R4019 22K
A/C/E HEAD
CN4001
AUDIO HEAD 1
AUDIO HEAD 2
GND 3
AUDIO ERASE 4
GND 5
(TO A/C/E HEAD)
TP4004
R4022 10
GND
VR4002 2.2K-B
BIAS
C4026 0.001
C4020 47/16V
C4021 47/16V
C4001 680P
R4001 47K
C4004 1/50V (LL)
J
L4003 470μ
T4001
F.E HEAD
CN4002
FULL ERASE 1
GND 2
(TO F.E HEAD)
TP4005
R4023 1(1/4)
C4025 0.033/100V
C4022 22/16V
C4023 0.0015
R4020 22K
C4024 0.001
TR4001 2SC2001
R4021 18
10.9 (0.3)
1.4 (0.3)
1.1 (0)
R4305 560
R4002 3.9K
R4003 22K
C4005 0.0047
R4004 680K
C4007 47/16V
R4007 1K
C4008 0.012
C4009 0.012
L4001 8.2m
VR4001 10K-B
PB LEVEL
R4009 4.7K
C4010 47/16V
R4008 56K
R4011 1.1K
R4012 1.2K
TP4002
TP4001
CN4004
3 AUDIO OUT
2 GND
1 AUDIO IN
(TO REAR JACK)
30 0 (0)
29 4.8 (0)
28 11.4 (0.3)
27 12.2 (12.2)
26 0 (5.0)
25 0 (0)
24 0 (0)
23 0 (0)
22 5.6 (5.6)
21 1.1 (5.1)
20 0 (0)
19 0 (0)
18 2.5 (2.5)
17 0.3 (0.3)
16 5.6 (5.6)
1 0 (0)
2 10.9 (10.9)
3 12.2 (12.2)
4 0.3 (0.3)
5 0 (0)
6 0.6 (0.6)
7 0.4 (0.4)
8 0 (0)
9 0 (0)
10 0 (0)
11 3.3 3.4)
12 0 (0)
13 0 (0)
14 0.5 (0.6)
15 0 (0)
POWER
EE
REC
PB
VOLTAGE
: REC
( ): PB

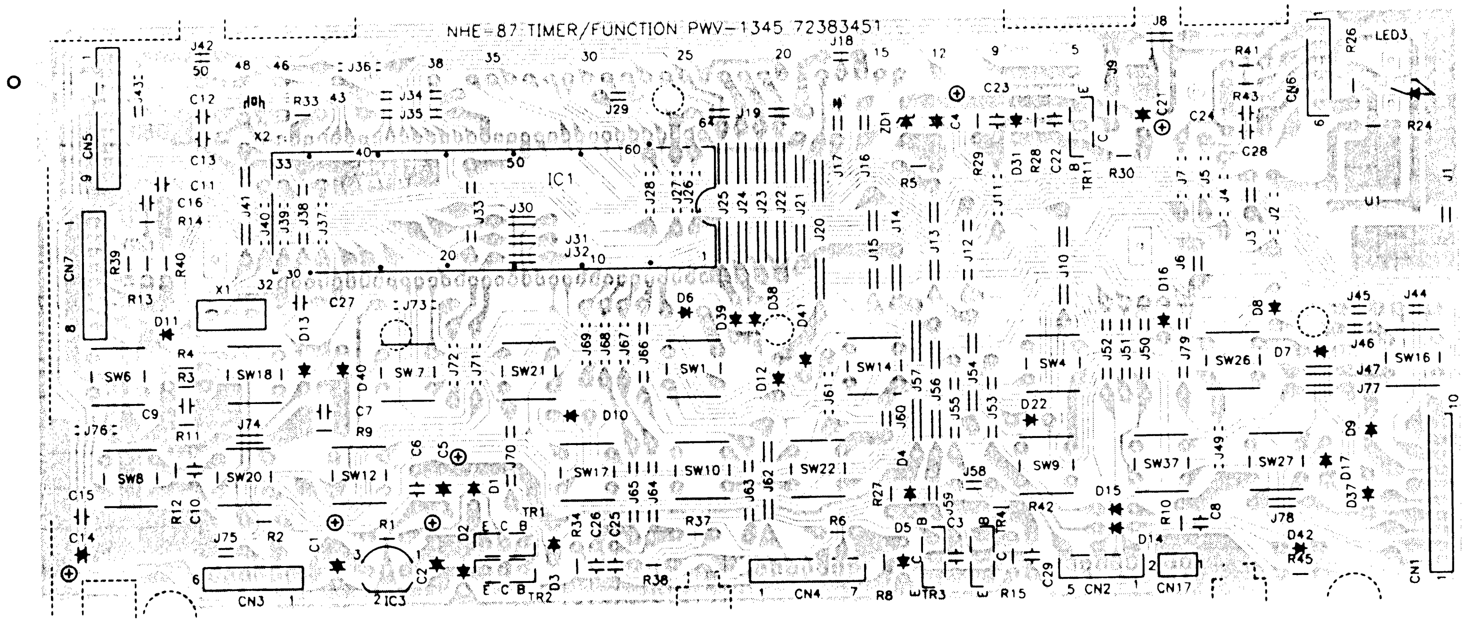
4-7. AUDIO CIRCUIT BOARD (SOLDER SIDE) (N9055G)

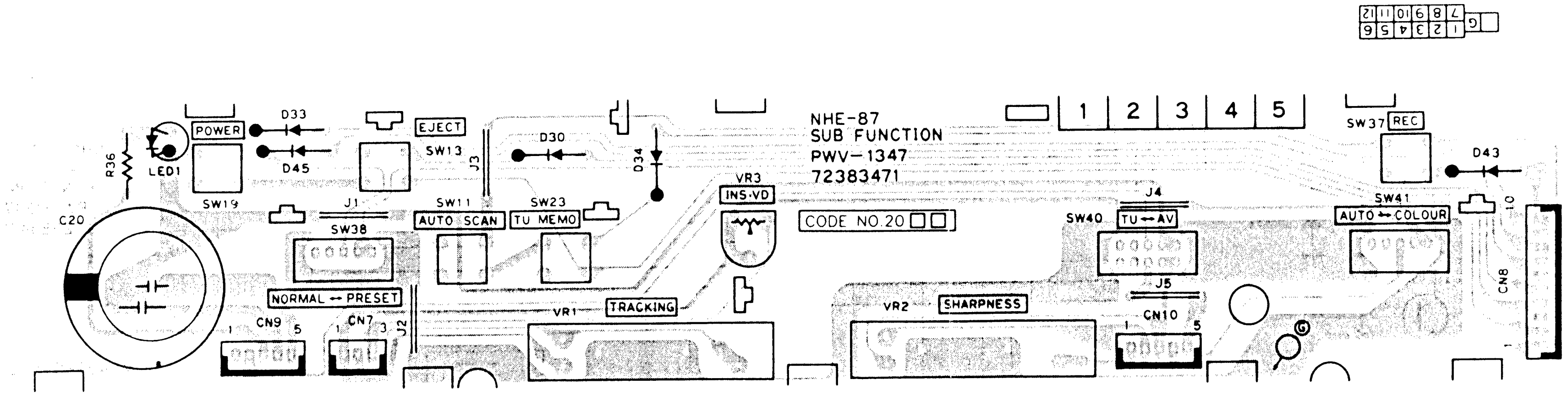

72383181
C15
R16
C14
R14
C11
R10
R15
CN3
5
1
R11
R13
J1
J2
J3
L3
T1
3
4
6
C22
C25
CN2
2
1
TP5
C12
C13
L2
IC1
C19
C18
C23
R20
C26
R23
R12
C10
TP2
16
30
NHE-87
PWV-1318
NORMAL AUDIO
72383181
VR1
R9
IC1
LA 7098
15
1
R19
C24
E
C
GND
B
TR1
TP3
R21
C9
C8
L1
R5
C4
C20
R22
R8
R7
C7
R4
C21
VR2
TP1
C5
TP4
CN1
R2
R3
CN4
NHE-8
PWV-1318
NORMAL AU
72383181

4-8. TIMER FUNCTION/SUB FUNCTION SCHEMATIC DIAGRAM (N9055G)

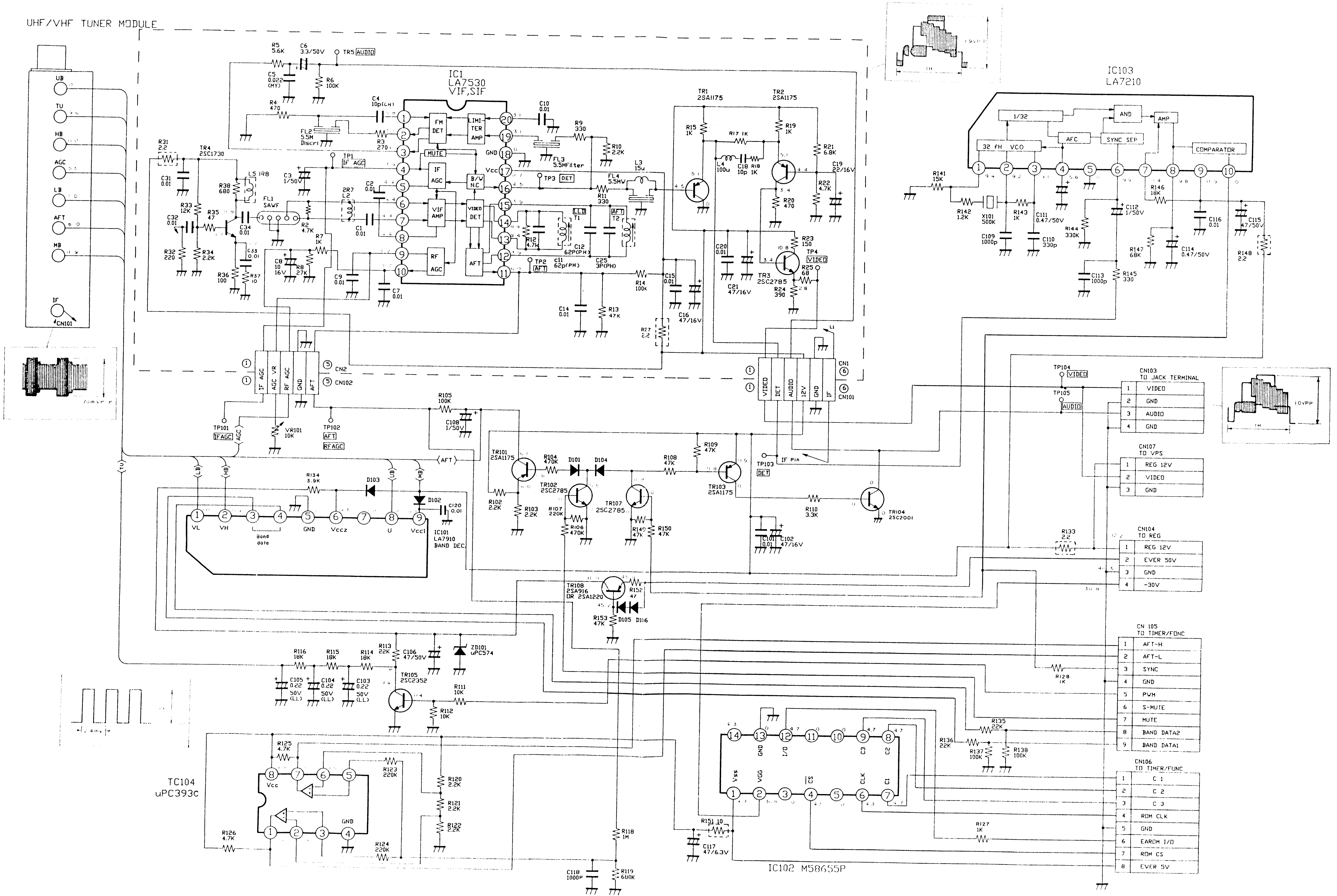

SUB FUNCTION
TIMER/FUNCTION
VR2001 300KB
VR2003 100K
VR2002 20KB
CN2011
EVER 5V
TRACKING
INS VD ADJ
(TO SERVO)
CN2008
CN2001
KEY 0
KEY 1
KEY 2
KEY 3
S 0
S 9
S 3
S 6
S 10
S 1
SW2038 1-1-2 PRESET ↔ NORMAL
SW2013 EJECT
SW2037 REC
SW2019 POWER
SW2023 TU MEMO
SW2011 AUTO SCAN
SW2041 1-1-2 COLOR ↔ AUTO
SW2040
TU ↔ AV
LED2001 POW IND
R2036 330
CN2009
CN2002
S 7
LINE
POWER IND
GND
SUPER CAP
CN2010
REC 5V
SHARPNESS
COLOR/AUTO
TUNER/AV(L)
(TO VIDEO)
CN2017
BATT(+)
CN2003
EVER 10V
-30V
AC 5.2V
TU CONT
(TO SYSCON)
CN2004
SCK
SO
SI
CSS
CSO
RESET
P FAIL DET
CN2005
NC
MUTE
PWM
SYNC
AFC-L
AFC-H
CN2007
C1
C2
C3
ROM CLK
EAROM I/O
ROM CS
TIMER 5V
(TO TU/IF)
CN2006
SDA
SCLK
VALID
(TO VPS DEC)
LED6003 RED
R6026 330
IC2003 M5278L56
TR2001 DTA1241S
TR2002
TR2003
TR2004
TR201
U2001 BX1418
ZD2001 RD91EB
IC2001 μPD75216ACW-021
FIP2001 FIP9TM7
X2001 4.19MHz
X2002 32KHz
50Hz -23V -33V
50Hz -24V -33V
50Hz 0.6V -0.5V
-30V 3Vpp
244us 5V 0V -30V 2.44ms
4.8V 32K 0V
3V 1V
5V 4.19M -0.1V
4V 0.7V 4.19M
6ms 4.8V 0V RESET PULSE
240us 4.6V 0V
244us 4V 0V 244ms
5V 0V 1.95ms
SW2001 STOP
SW2037 TIM ADJ
SW2026 PLAY
SW2014 PAUSE/STILL
SW2027 STILL ADV
SW2016 REW
SW2004 FF
SW2017 RES/CLR
SW2018 CH DOWN
SW2006 CH UP
SW2007 S.R
SW2020 SHIFT(-)
SW2008 SHIFT(+)
SW2021 TIM REC
SW2009 VPS REC
SW2022 TIM/COUNT
SW2010 COUN MEM
SW2012 TIM MODE
VCR OFF
12/20P
SP LP EP REC PLAY NO TAB
START E.D STOP VPS 1 2 3 4 DATE
SU MO TU WE TH FR SA
NOTE ( ): POWER OFF

4-9. TIMER FUNCTION/SUB FUNCTION CIRCUIT BOARD (SOLDER SIDE) (N9055G)

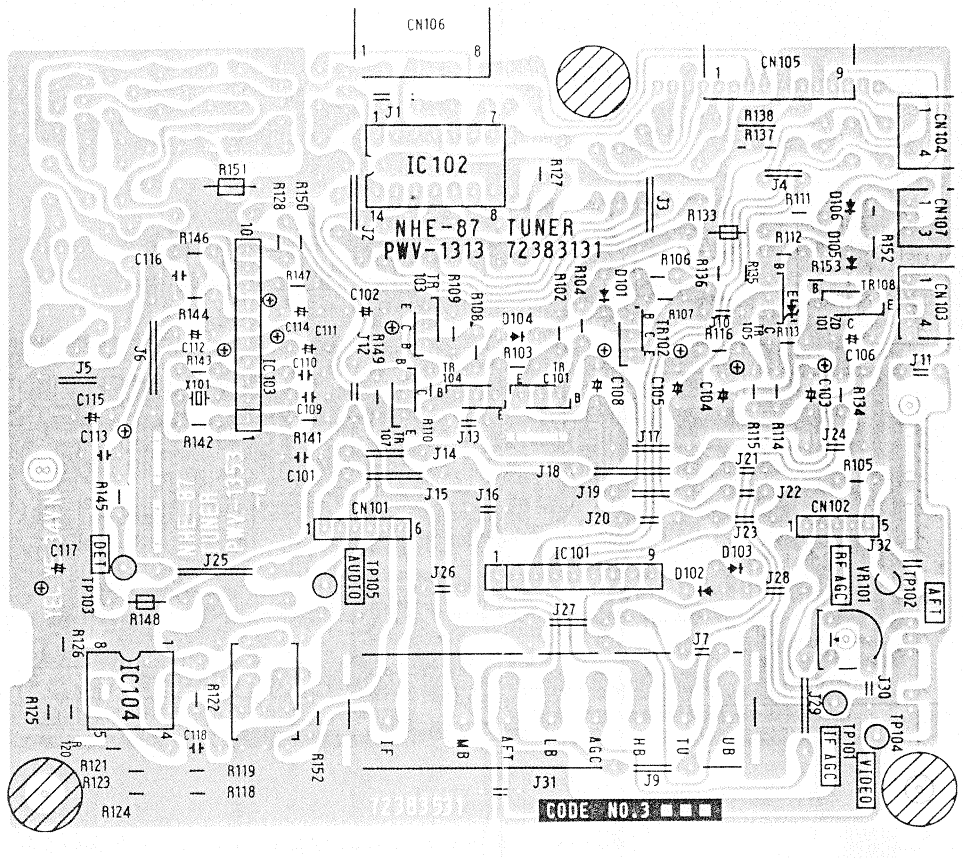

NHE-87 TIMER/FUNCTION PWV-1345 72383451
IC1
IC3
X1
X2
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN17
LED3
U1
TR1
TR2
TR3
SW1
SW4
SW6
SW7
SW8
SW9
SW10
SW12
SW14
SW16
SW17
SW18
SW20
SW21
SW22
SW26
SW27
SW37

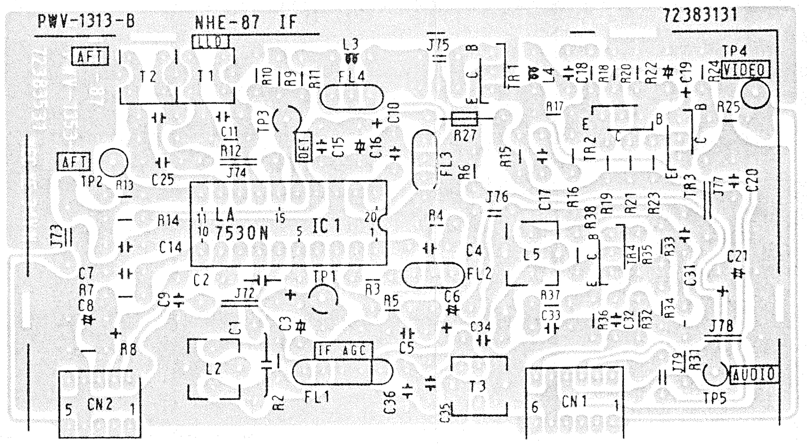

NHE-87
SUB FUNCTION
PWV-1347
72383471
POWER
EJECT
AUTO SCAN
TU MEMO
NORMAL ↔ PRESET
TRACKING
INS-VD
CODE NO.20
SHARPNESS
TU ↔ AV
AUTO ↔ COLOUR
REC
1
2
3
4
5
LED1
C20
R36
D33
D45
D30
D34
D43
SW13
SW19
SW11
SW23
SW38
SW40
SW41
SW37
VR1
VR2
VR3
J1
J2
J3
J4
J5
CN7
CN8
CN9
CN10

4-10. TUNER/IF SCHEMATIC DIAGRAM (N9055G)

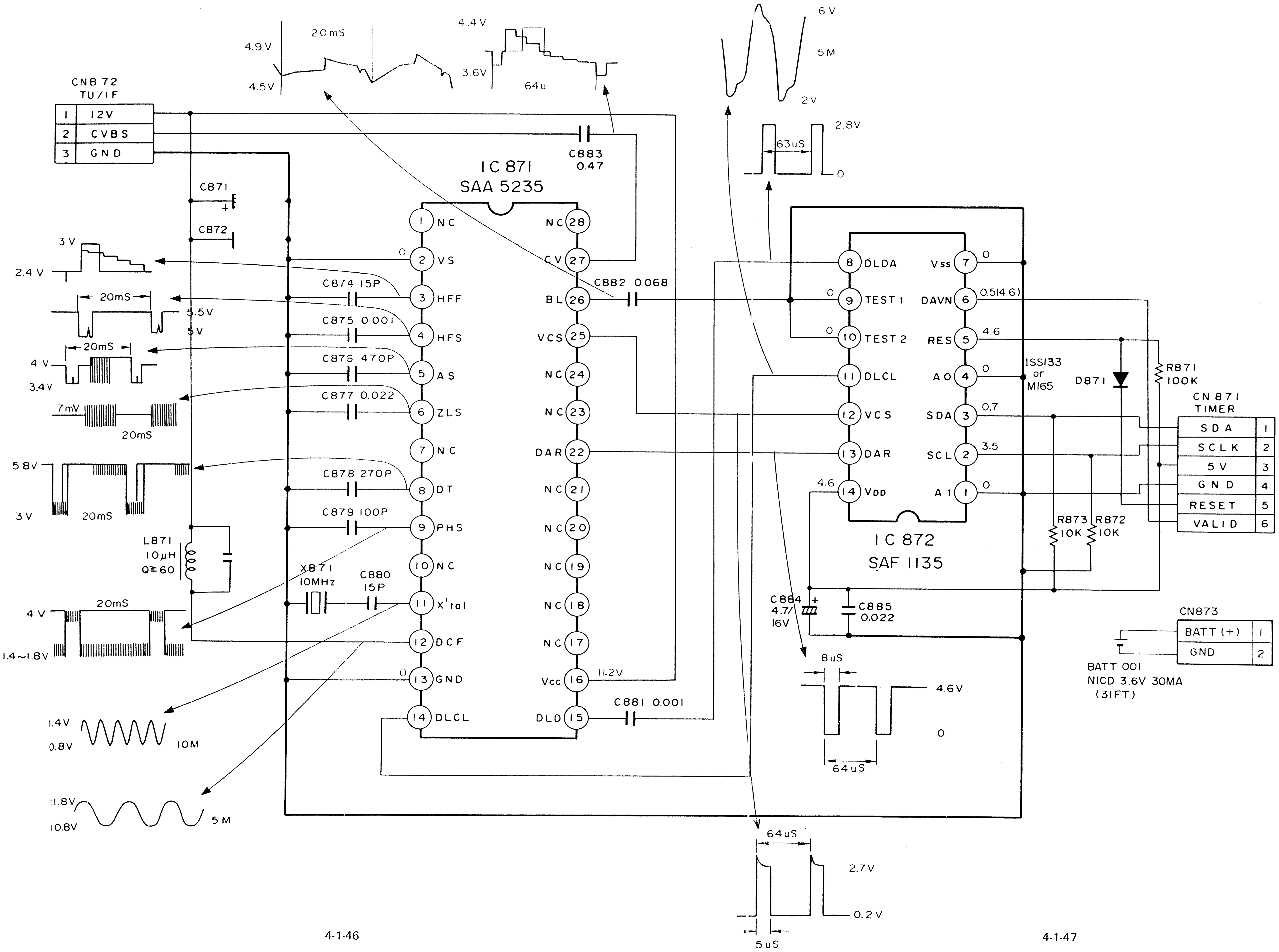

UHF/VHF TUNER MODULE
UB
TU
HB
AGC
LB
AFT
MB
IF
CN101
R31 2.2
TR4 2SC1730
C31 0.01
R33 12K
R35 47
C32 0.01
R32 220
R34 2.2K
R36 100
R37 10
R38 680
L5 IR8
C34 0.01
C33 0.01
FL1 SAWF
R5 5.6K
C6 3.3/50V
TR5 AUDIO
C5 0.022 (MY)
R6 100K
R4 470
C4 10p(CH)
FL2 5.5H Discri
R3 270
TP1 IF AGC
C3 1/50V
2R7 L2
C2 0.01
R2 4.7K
R7 1K
C1 0.01
C8 10 16V
R8 27K
C9 0.01
C7 0.01
IC1 LA7530 VIF,SIF
FM DET
LIMITER AMP
MUTE
IF AGC
VIF AMP
RF AGC
B/W N.C
VIDEO DET
AFT
GND
Vcc
C10 0.01
R9 330
R10 2.2K
FL3 5.5MFilter
TP3 DET
FL4 5.5HV
L3 15u
R11 330
LLD T1
AFT T2
R12 4.7K
C12 62P(PH)
C11 62p(PH)
C25 3P(PH)
TP2 AFT
R14 100K
C15 0.01
C14 0.01
R13 47K
C16 47/16V
R27 2.2
TR1 2SA1175
TR2 2SA1175
R15 1K
R17 1K
R19 1K
L4 100u
C18 10p
R18 1K
R21 6.8K
C19 22/16V
R22 4.7K
R20 470
C20 0.01
C21 47/16V
R23 150
TP4 VIDEO
R25 68
TR3 2SC2785
R24 390
IF AGC
AGC VR
RF AGC
GND
AFT
CN2
CN102
VIDEO
DET
AUDIO
12V
GND
IF
CN1
CN101
IC103 LA7210
1/32
AND
AMP
32 FH VCO
AFC
SYNC SEP
COMPARATOR
R141 15K
R142 1.2K
X101 500K
R143 1K
C109 1000p
C111 0.47/50V
C110 330p
R144 330K
C112 1/50V
R146 18K
C113 1000p
R145 330
R147 68K
C114 0.47/50V
C116 0.01
C115 47/50V
R148 2.2
TP104 VIDEO
TP105 AUDIO
CN103 TO JACK TERMINAL
1 VIDEO
2 GND
3 AUDIO
4 GND
CN107 TO VPS
1 REG 12V
2 VIDEO
3 GND
CN104 TO REG
1 REG 12V
2 EVER 50V
3 GND
4 -30V
CN 105 TO TIMER/FONC
1 AFT-H
2 AFT-L
3 SYNC
4 GND
5 PWM
6 S-MUTE
7 MUTE
8 BAND DATA2
9 BAND DATA1
CN106 TO TIMER/FUNC
1 C 1
2 C 2
3 C 3
4 ROM CLK
5 GND
6 EAROM I/O
7 ROM CS
8 EVER 5V
TP101 IFAGC
AGC
VR101 10K
TP102 AFT RFAGC
R105 100K
C108 1/50V
TU
LB
HB
UB
MB
AFT
R134 3.9K
D103
D102
C120 0.01
VL
VH
Band data
GND
Vccz
U
Vcc1
IC101 LA7910 BAND DEC.
TR101 2SA1175
R104 470K
D101
D104
R108 47K
R109 47K
TR102 2SC2785
TR107 2SC2785
TR103 2SA1175
TP103 DET
IF Pin
R102 2.2K
R103 2.2K
R107 220K
R106 470K
R149 47K
R150 47K
R110 3.3K
TR104 2SC2001
C101 0.01
C102 47/16V
R133 2.2
TR108 2SA916 OR 2SA1220
R152 47
R153 47K
D105
D106
R128 1K
R116 18K
R115 18K
R114 18K
R113 22K
C106 47/50V
ZD101 uPC574
C105 0.22 50V (LL)
C104 0.22 50V (LL)
C103 0.22 50V (LL)
TR105 2SC2352
R111 10K
R112 10K
4ms
IC104 uPC393C
R125 4.7K
R123 220K
Vcc
GND
R120 2.2K
R121 2.2K
R122 2.2K
R126 4.7K
R124 220K
R118 1M
C118 1000P
R119 680K
R151 10
C117 47/6.3V
Vss
VGG
CS
CLK
C1
GND
I/O
C3
C2
IC102 M58655P
R135 22K
R136 22K
R137 100K
R138 100K
R127 1K
1.0VP-P
1H
10VPP
1H

4-11. TUNER/IF CIRCUIT BOARD (SOLDER SIDE) (N9055G)

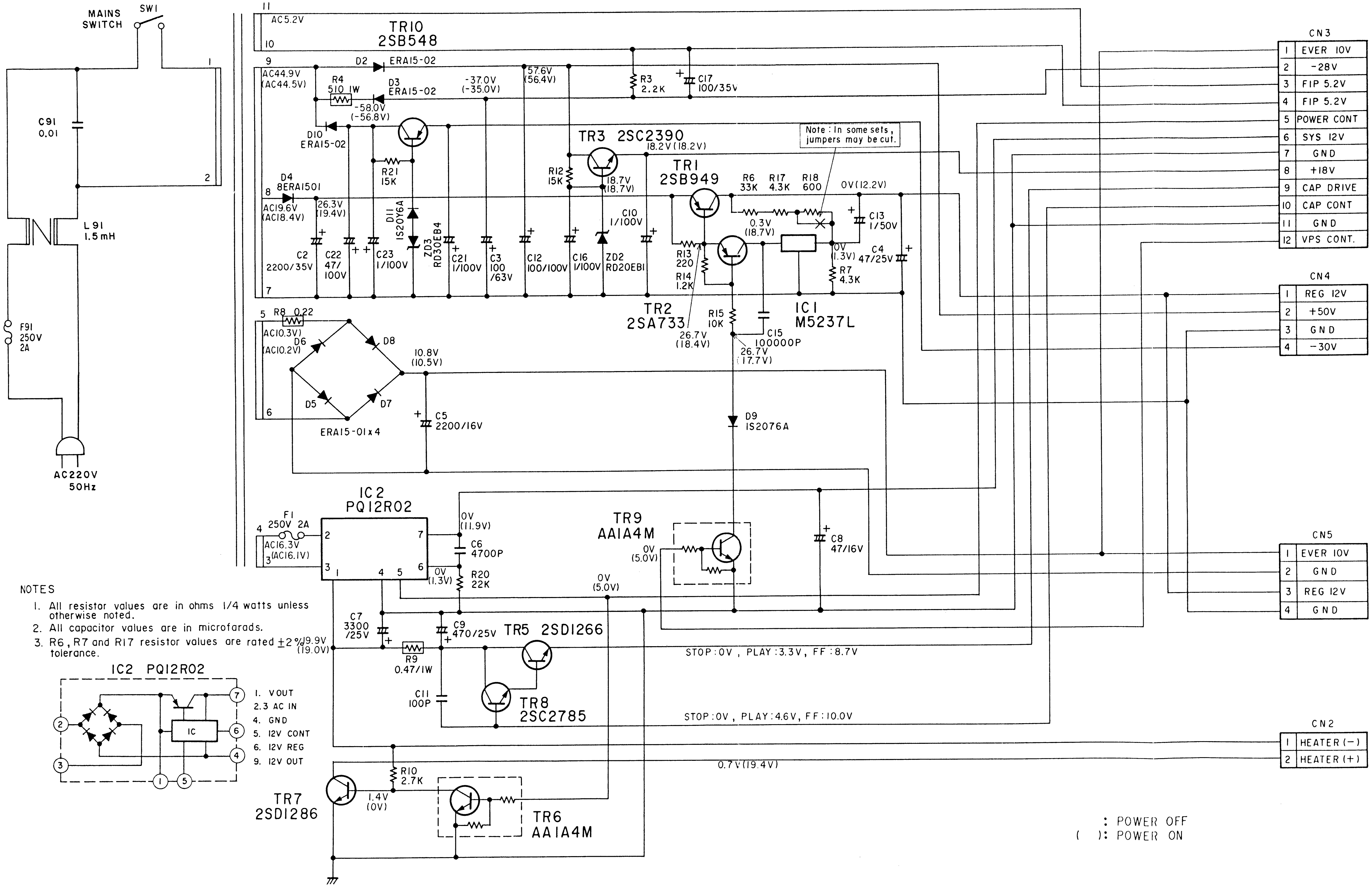

CN106
CN105
CN104
CN107
CN103
CN101
CN102
IC102
IC101
IC103
IC104
NHE-87 TUNER
PWV-1313 72383131
D101
D102
D103
D104
D105
D106
TR102
TR103
TR104
TR105
TR106
TR107
TR108
VR101
X101
DET
AUDIO
RF AGC
AFT
IF AGC
VIDEO
TP101
TP102
TP103
TP104
TP105
IF
MB
AFT
LB
AGC
HB
TU
UB
CODE NO.3
72383131


PWV-1313-B
NHE-87 IF
72383131
LLD
AFT
VIDEO
DET
IF AGC
AUDIO
IC1
LA 7530N
T1
T2
T3
TR1
TR2
TR3
TR4
FL1
FL2
FL3
FL4
L2
L3
L4
L5
TP1
TP2
TP3
TP4
TP5
CN1
CN2

4-12. VPS DECODER SCHEMATIC DIAGRAM (N9055G)


CNB 72
TU/IF
1 12V
2 CVBS
3 GND
C871
C872
C874 15P
C875 0.001
C876 470P
C877 0.022
C878 270P
C879 100P
L871
10μH
Q≧60
XB71
10MHz
C880
15P
IC 871
SAA 5235
1 NC
2 VS
3 HFF
4 HFS
5 AS
6 ZLS
7 NC
8 DT
9 PHS
10 NC
11 X'tal
12 DCF
13 GND
14 DLCL
28 NC
27 CV
26 BL
25 VCS
24 NC
23 NC
22 DAR
21 NC
20 NC
19 NC
18 NC
17 NC
16 Vcc
15 DLD
11.2V
C883
0.47
C882 0.068
C881 0.001
IC 872
SAF 1135
8 DLDA
9 TEST 1
10 TEST 2
11 DLCL
12 VCS
13 DAR
14 VDD
7 Vss
6 DAVN
5 RES
4 A0
3 SDA
2 SCL
1 A1
0.5(4.6)
4.6
0.7
3.5
ISS133
or
MI65
D871
R871
100K
R873
10K
R872
10K
C884
4.7/
16V
C885
0.022
CN 871
TIMER
SDA 1
SCLK 2
5V 3
GND 4
RESET 5
VALID 6
CN873
BATT (+) 1
GND 2
BATT 001
NICD 3.6V 30MA
(31FT)
4.9V
4.5V
20mS
4.4V
3.6V
64u
6V
5M
2V
2.8V
63uS
0
3V
2.4V
20mS
5.5V
5V
4V
3.4V
7mV
5.8V
3V
4V
1.4~1.8V
1.4V
0.8V
10M
11.8V
10.8V
5M
8uS
4.6V
64uS
64uS
2.7V
0.2V
5uS

4-13. POWER/REGULATOR SCHEMATIC DIAGRAM (N9055G)

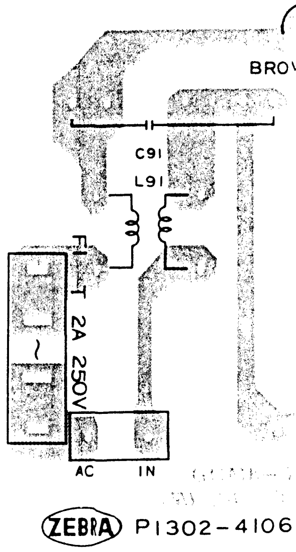

MAINS SWITCH
SW1
C91 0.01
L91 1.5mH
F91 250V 2A
AC220V 50Hz
TR10 2SB548
AC5.2V
AC44.9V (AC44.5V)
D2 ERA15-02
R4 510 1W
D3 ERA15-02
-37.0V (-35.0V)
57.6V (56.4V)
R3 2.2K
C17 100/35V
-58.0V (-56.8V)
D10 ERA15-02
R21 15K
TR3 2SC2390
18.2V (18.2V)
R12 15K
18.7V (18.7V)
TR1 2SB949
R6 33K
R17 4.3K
R18 600
0V (12.2V)
Note : In some sets, jumpers may be cut.
D4 8ERA1501
AC19.6V (AC18.4V)
26.3V (19.4V)
D11 1S2076A
ZD3 RD30EB4
C10 1/100V
0.3V (18.7V)
C13 1/50V
0V (1.3V)
C4 47/25V
C2 2200/35V
C22 47/100V
C23 1/100V
C21 1/100V
C3 100/63V
C12 100/100V
C16 1/100V
ZD2 RD20EB1
R13 220
R14 1.2K
R7 4.3K
TR2 2SA733
IC1 M5237L
R15 10K
26.7V (18.4V)
C15 100000P
26.7V (17.7V)
R8 0.22
AC10.3V (AC10.2V)
D6
D8
10.8V (10.5V)
D5
D7
C5 2200/16V
ERA15-01 x 4
D9 1S2076A
IC2 PQ12R02
F1 250V 2A
AC16.3V (AC16.1V)
0V (11.9V)
C6 4700P
0V (1.3V)
R20 22K
0V (5.0V)
TR9 AA1A4M
0V (5.0V)
C8 47/16V
C7 3300/25V
C9 470/25V
TR5 2SD1266
19.9V (19.0V)
R9 0.47/1W
C11 100P
TR8 2SC2785
STOP : 0V , PLAY : 3.3V , FF : 8.7V
STOP : 0V , PLAY : 4.6V , FF : 10.0V
0.7V (19.4V)
R10 2.7K
TR7 2SD1286
1.4V (0V)
TR6 AA1A4M
CN3
1 EVER 10V
2 -28V
3 FIP 5.2V
4 FIP 5.2V
5 POWER CONT
6 SYS 12V
7 GND
8 +18V
9 CAP DRIVE
10 CAP CONT
11 GND
12 VPS CONT.
CN4
1 REG 12V
2 +50V
3 GND
4 -30V
CN5
1 EVER 10V
2 GND
3 REG 12V
4 GND
CN2
1 HEATER (−)
2 HEATER (+)
IC2 PQ12R02
IC
1. VOUT
2.3 AC IN
4. GND
5. 12V CONT
6. 12V REG
9. 12V OUT

NOTES

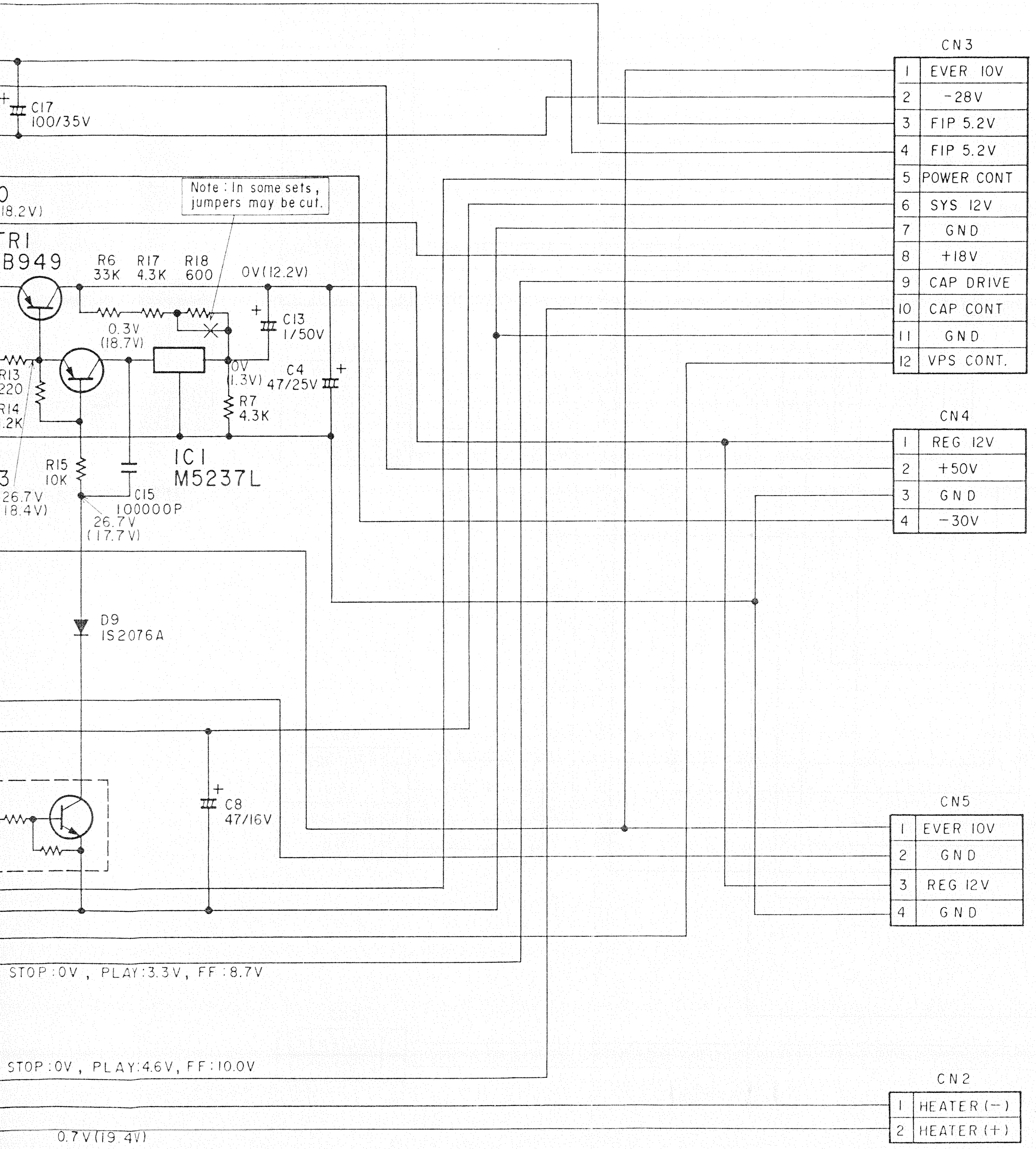
1. All resistor values are in ohms 1/4 watts unless otherwise noted.
2. All capacitor values are in microfarads.
3. R6, R7 and R17 resistor values are rated ±2% tolerance.

: POWER OFF
( ): POWER ON

4-14. POW

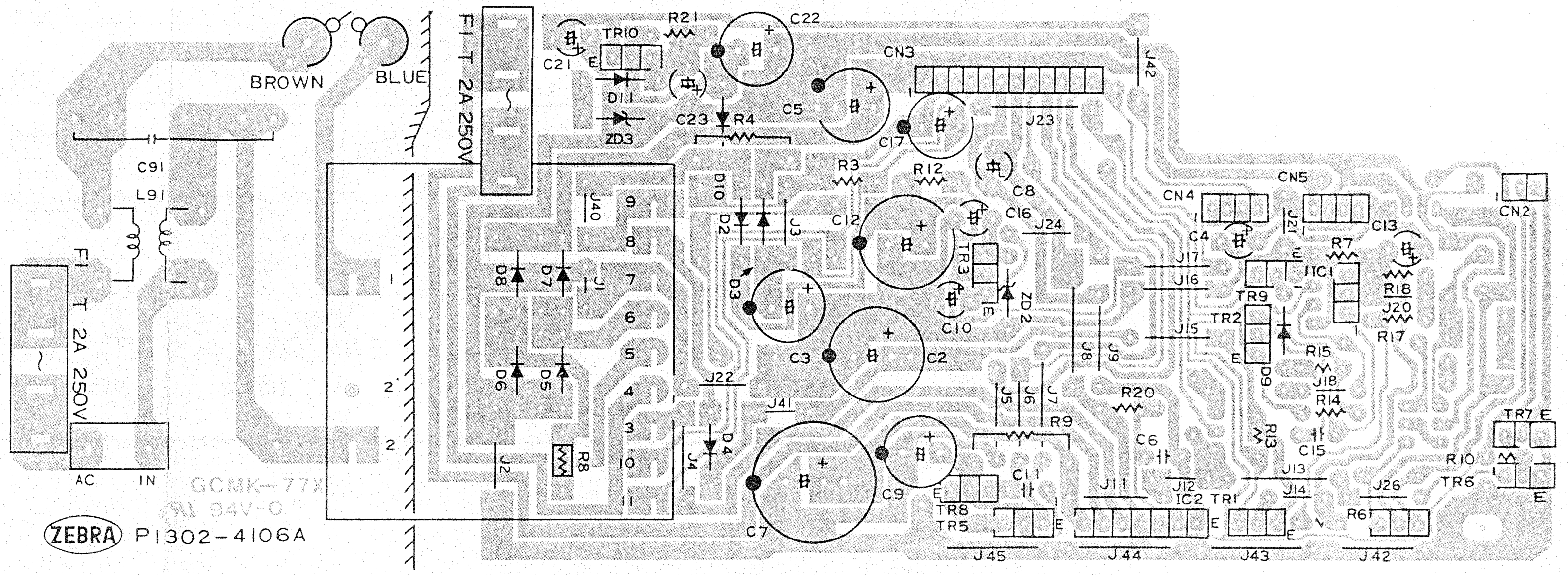

BRO
C91
L91
T 2A 250V
AC
IN

ZEBRA P1302-4106


CN3
1 EVER 10V
2 −28V
3 FIP 5.2V
4 FIP 5.2V
5 POWER CONT
6 SYS 12V
7 GND
8 +18V
9 CAP DRIVE
10 CAP CONT
11 GND
12 VPS CONT.
CN4
1 REG 12V
2 +50V
3 GND
4 −30V
CN5
1 EVER 10V
2 GND
3 REG 12V
4 GND
CN2
1 HEATER (−)
2 HEATER (+)
C17 100/35V
Note : In some sets, jumpers may be cut.
(18.2V)
TR1
B949
R6 33K
R17 4.3K
R18 600
0V(12.2V)
C13 1/50V
0.3V (18.7V)
0V (1.3V)
C4 47/25V
R7 4.3K
R13 220
R14 .2K
IC1 M5237L
R15 10K
C15 100000P
26.7V (18.4V)
26.7V (17.7V)
D9 1S2076A
C8 47/16V
STOP:0V, PLAY:3.3V, FF:8.7V
STOP:0V, PLAY:4.6V, FF:10.0V
0.7V(19.4V)

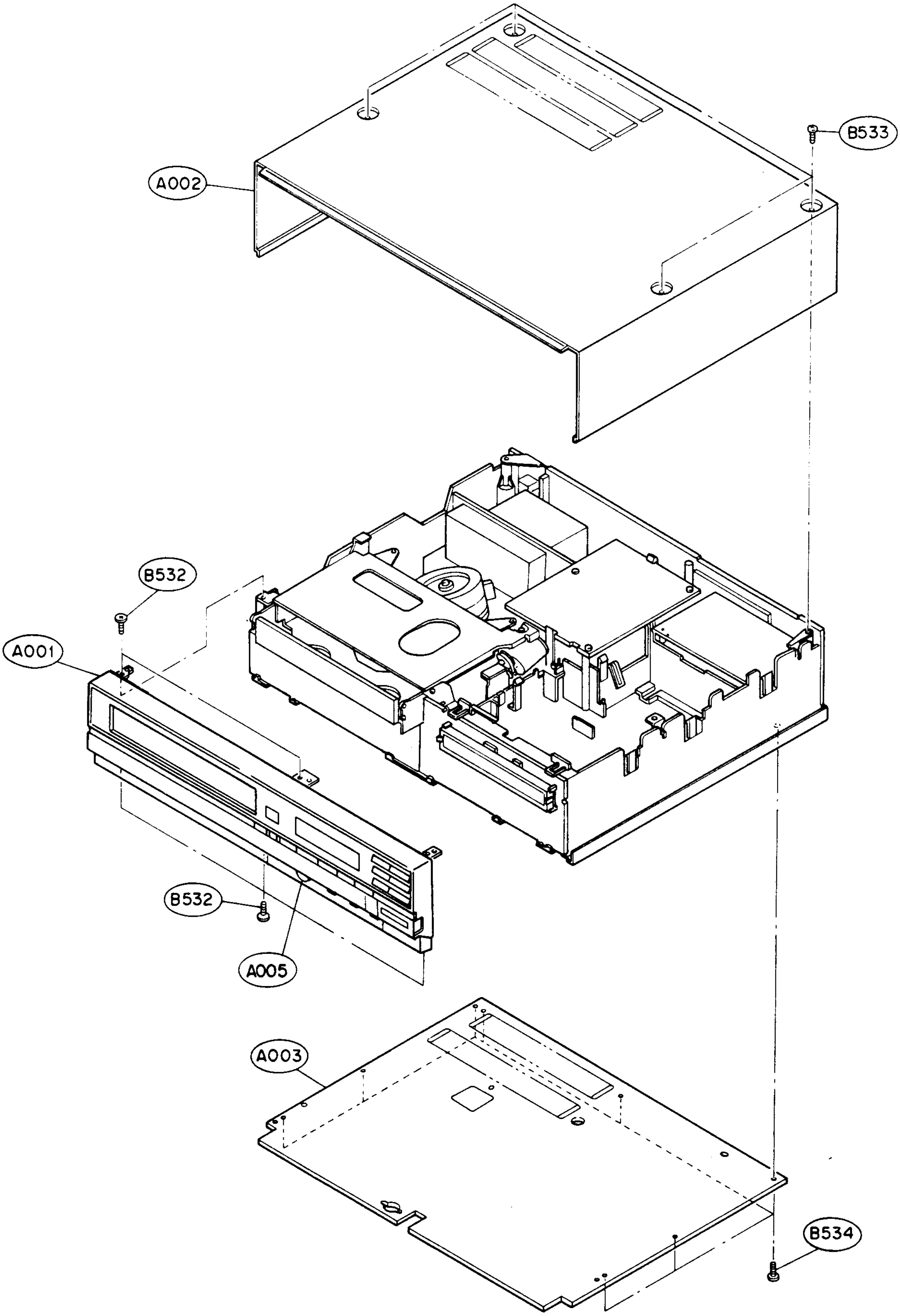
: POWER OFF
( ): POWER ON

4-14. POWER/REGULATOR CIRCUIT BOARD (SOLDER SIDE) (N9055G)

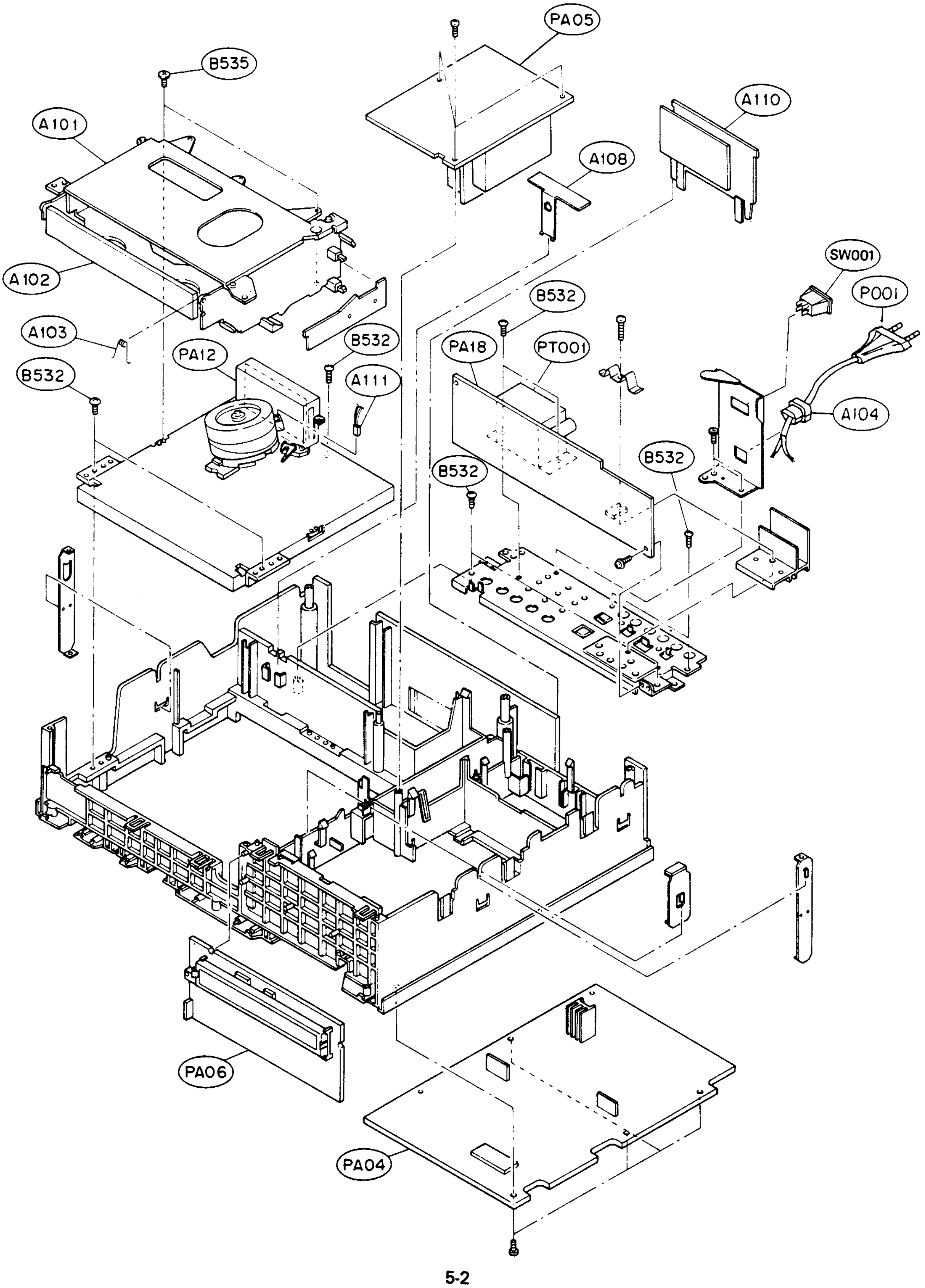

BROWN
BLUE
F1 T 2A 250V
C91
L91
AC IN
GCMK-77X
94V-0
ZEBRA P1302-4106A
TR10
R21
C22
C21
D11
ZD3
C23
R4
C5
CN3
J42
J23
C17
R3
R12
C8
C16
J24
CN5
CN4
CN2
C4
J21
C13
R7
J17
J16
IC1
R18
J20
TR9
TR2
R17
J15
R15
J18
R14
D9
R20
R13
C6
C15
J13
R10
TR6
TR7
D10
D2
J3
C12
TR3
ZD2
C10
D3
C3
C2
D8
D7
D1
D6
D5
J40
J1
J22
J41
J5
J6
J7
J8
J9
R9
D4
J4
R8
J2
C11
J11
J12
IC2
TR1
J14
J26
R6
C9
C7
TR8
TR5
J45
J44
J43
J42
1
2
3
4
5
6
7
8
9
10
11
E

SECTION 5
EXPLODED VIEW (N9053G)

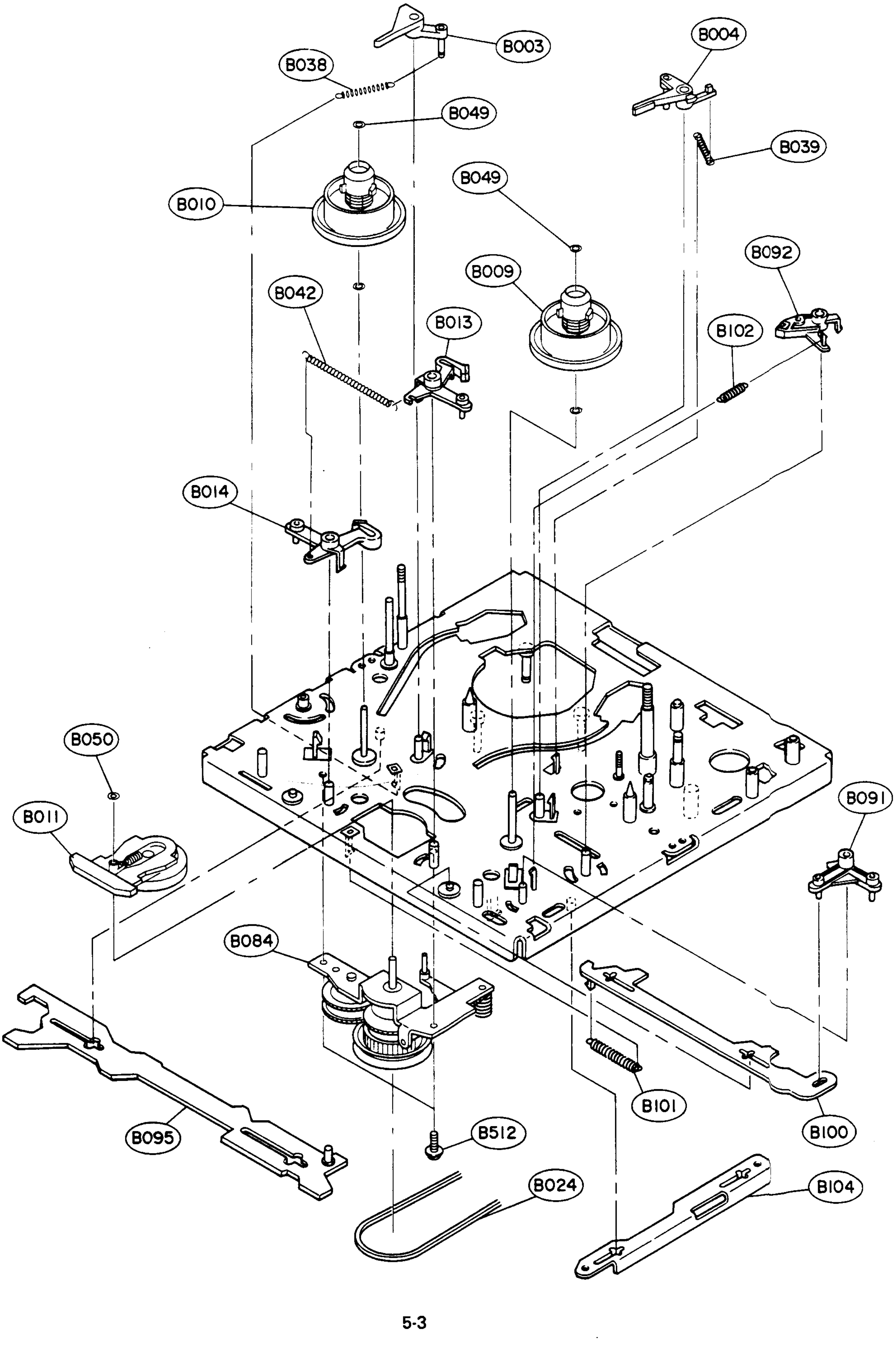
5-1. CABINET SECTION (N9053G)

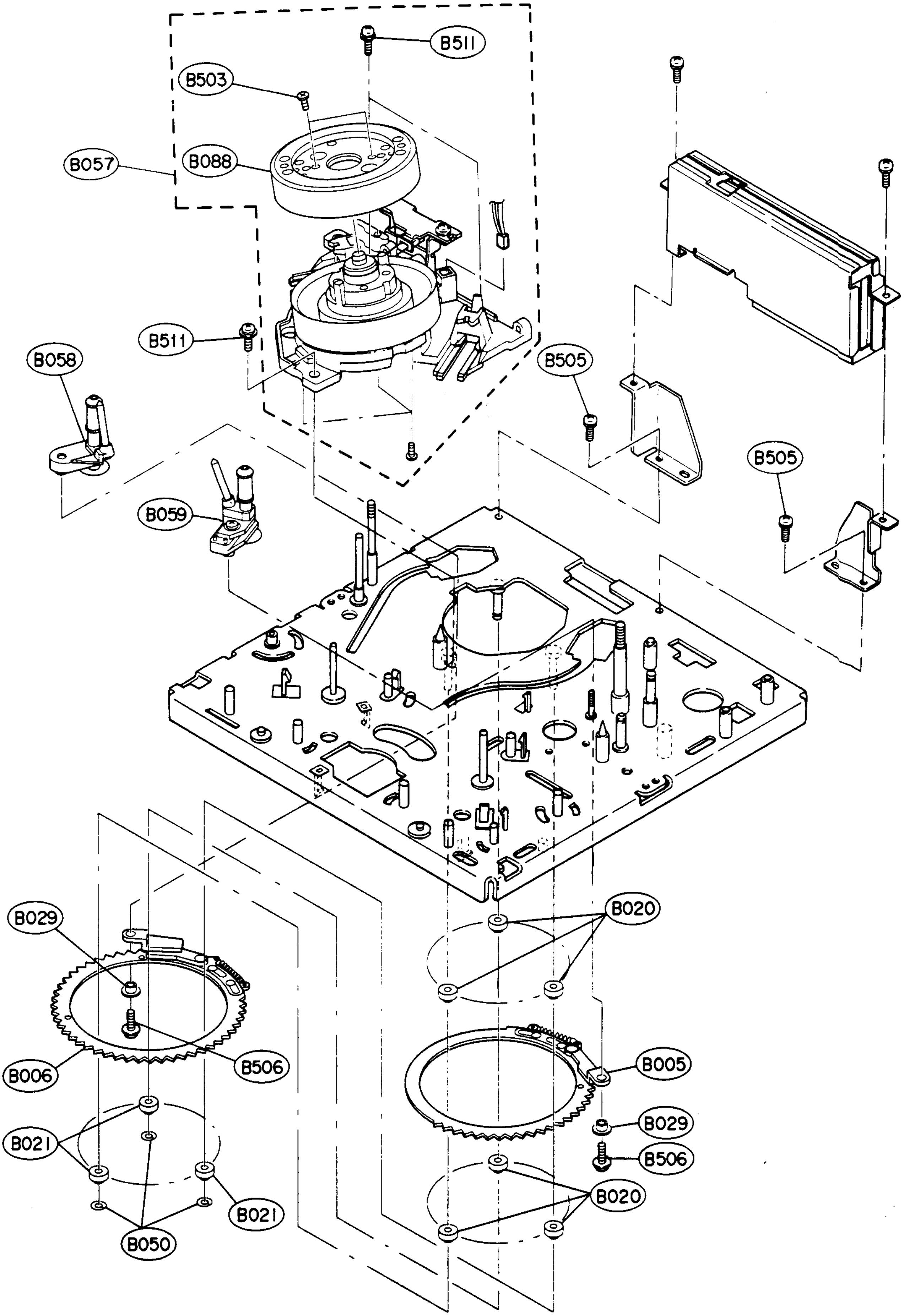

A002
B533
B532
A001
B532
A005
A003
B534

5-2. CHASSIS SECTION (N9053G)

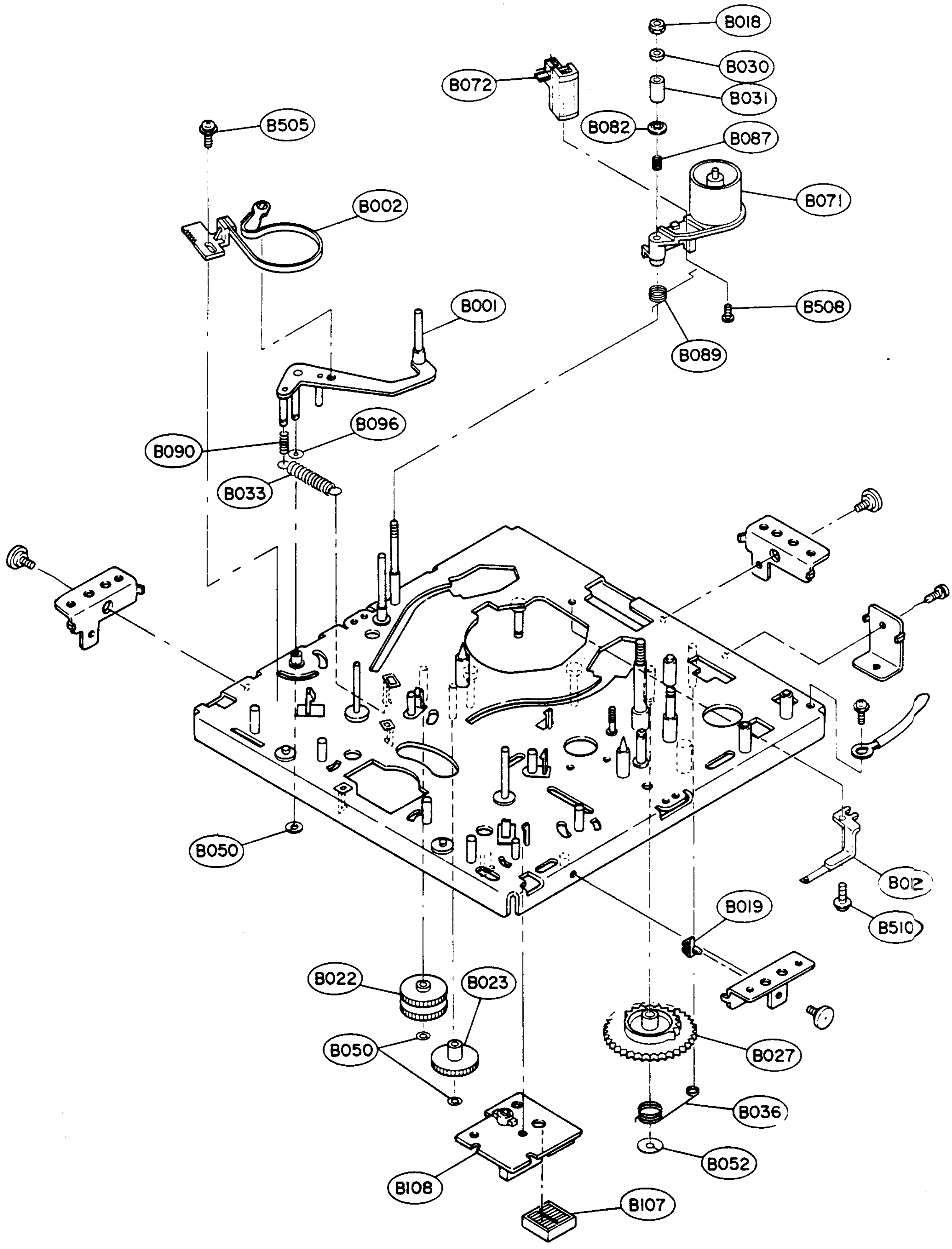

PA05
B535
A110
A101
A108
A102
SW001
B532
P001
A103
PA18
PT001
PA12
B532
A111
B532
A104
B532
B532
PA06
PA04

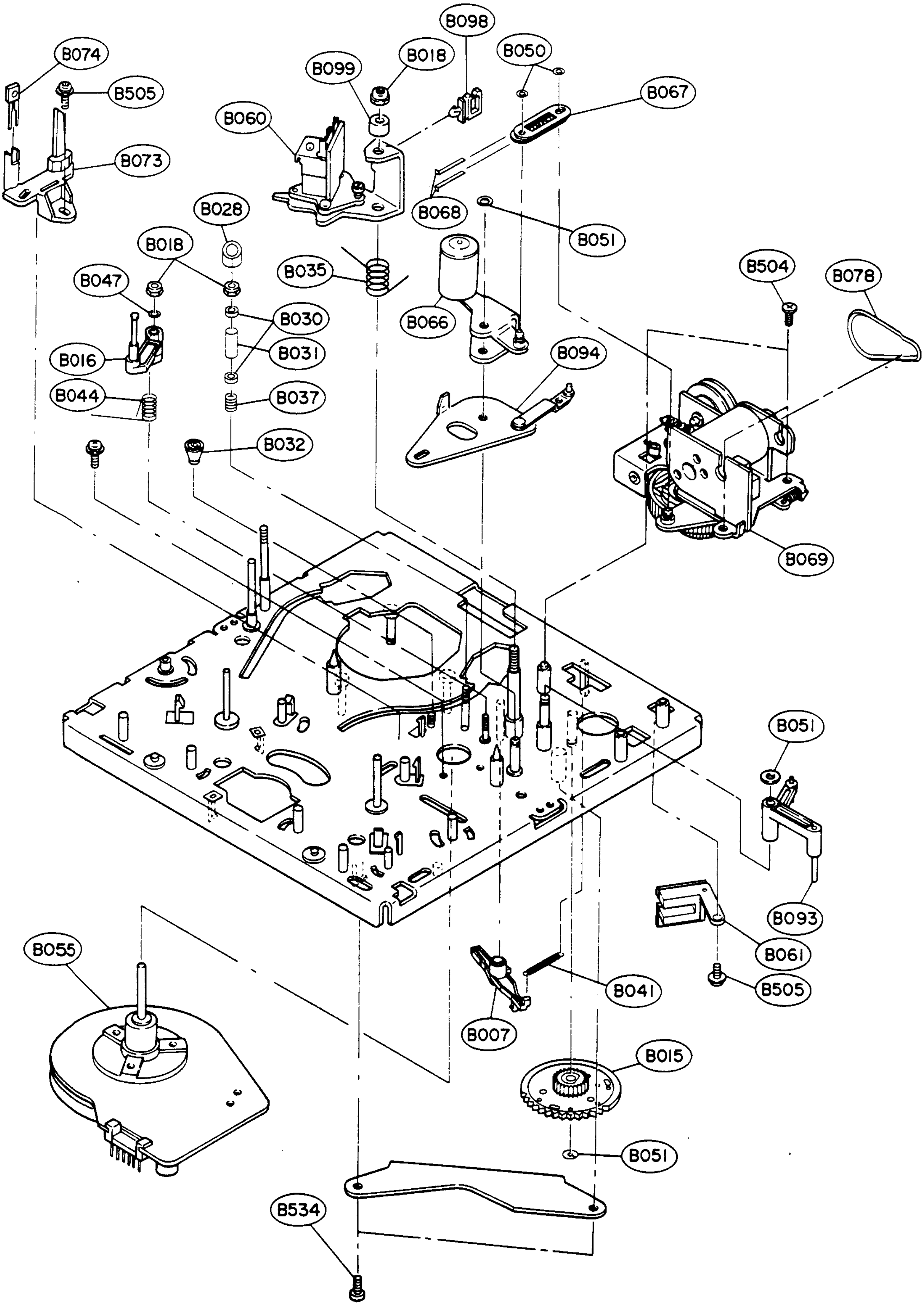
5-3. MECHANISM (I) SECTION (N9053G/N9055G)


B003
B004
B038
B049
B039
B010
B049
B092
B009
B042
B013
B102
B014
B050
B091
B011
B084
B101
B100
B095
B512
B024
B104

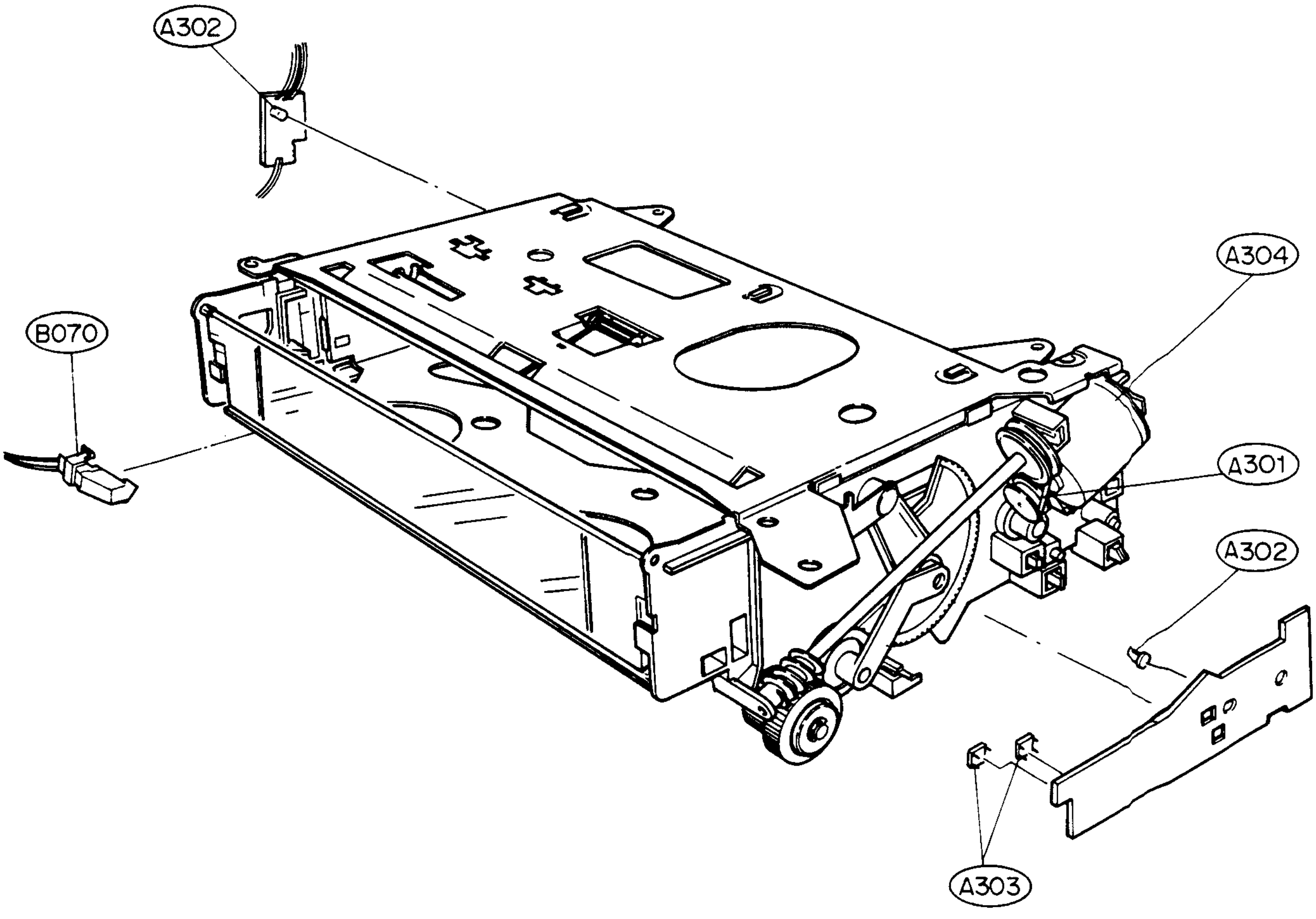

B511
B503
B057
B088
B511
B058
B505
B505
B059
B029
B020
B006
B506
B005
B029
B021
B506
B020
B021
B050

5-4. MECHANISM (II) SECTION (N9053G/N9055G)

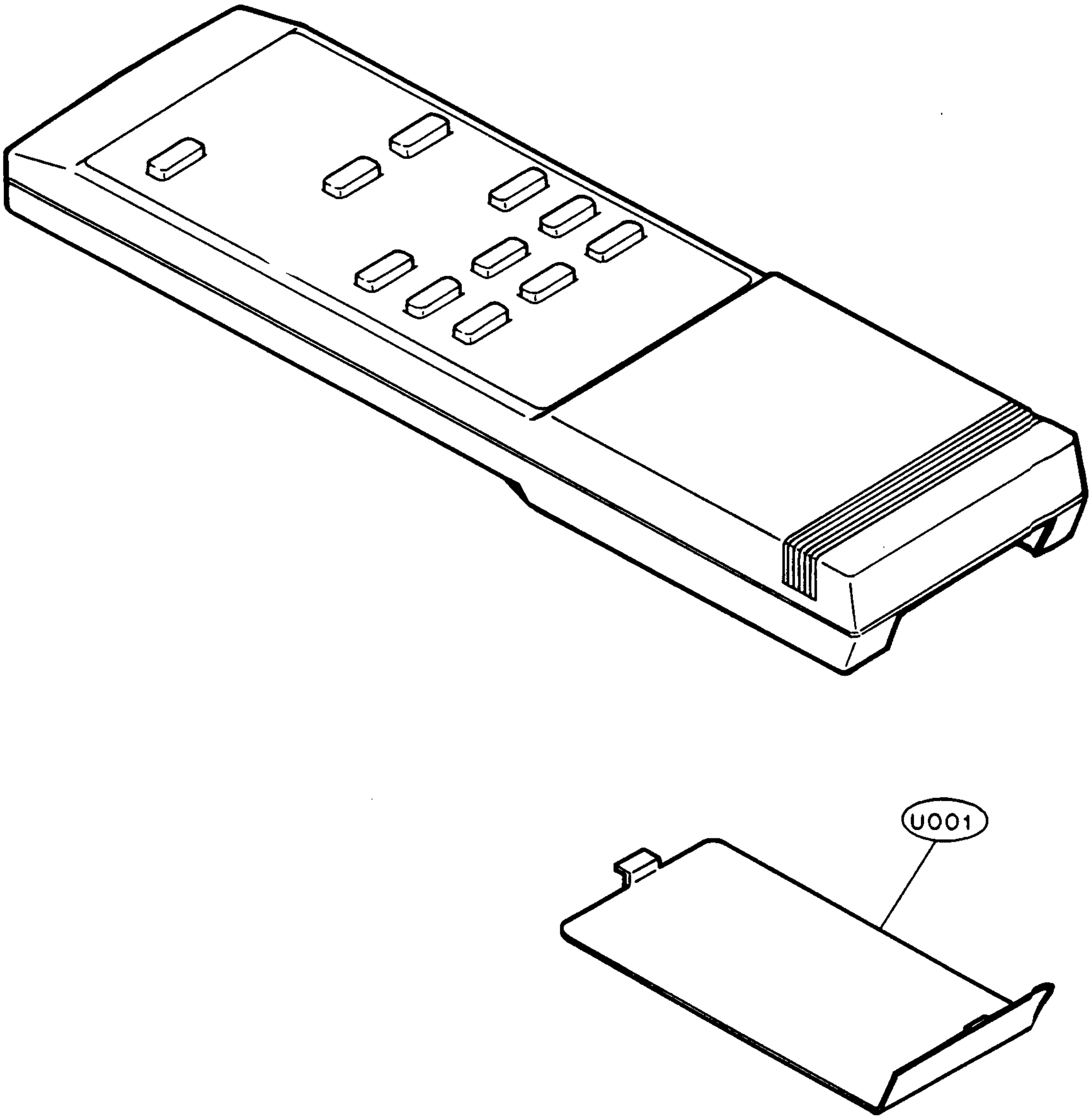

B018
B030
B072
B031
B505
B082
B087
B071
B002
B001
B508
B089
B096
B090
B033
B050
B012
B019
B510
B022
B023
B050
B027
B036
B052
B108
B107


B074
B505
B073
B099
B018
B098
B050
B067
B060
B068
B051
B028
B018
B047
B035
B030
B031
B016
B066
B044
B037
B032
B094
B504
B078
B069
B051
B093
B061
B505
B041
B007
B055
B015
B051
B534

5-5. CASSETTE HOUSING SECTION (N9053G)


A302
B070
A304
A301
A302
A303

5-6. WIRELESS REMOTE CONTROL SECTION (N9053G)

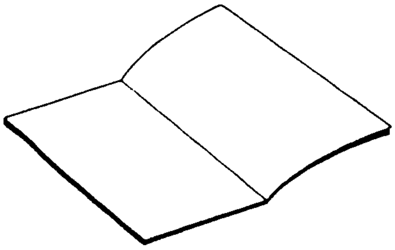


WIRELESS REMOTE CONTROL PARTS LIST

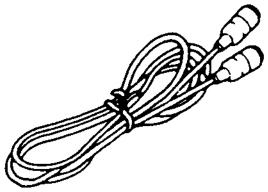
SYMBOL	PART NO.	DESCRIPTION	Q'TY
U001	18940255	BATTERY CASE	1

5-7. ACCESSORIES (N9053G)

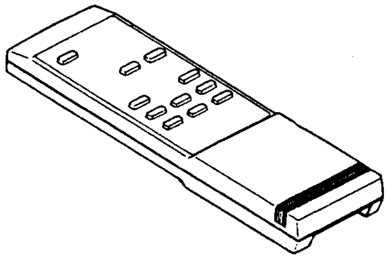
K003



K007



K008

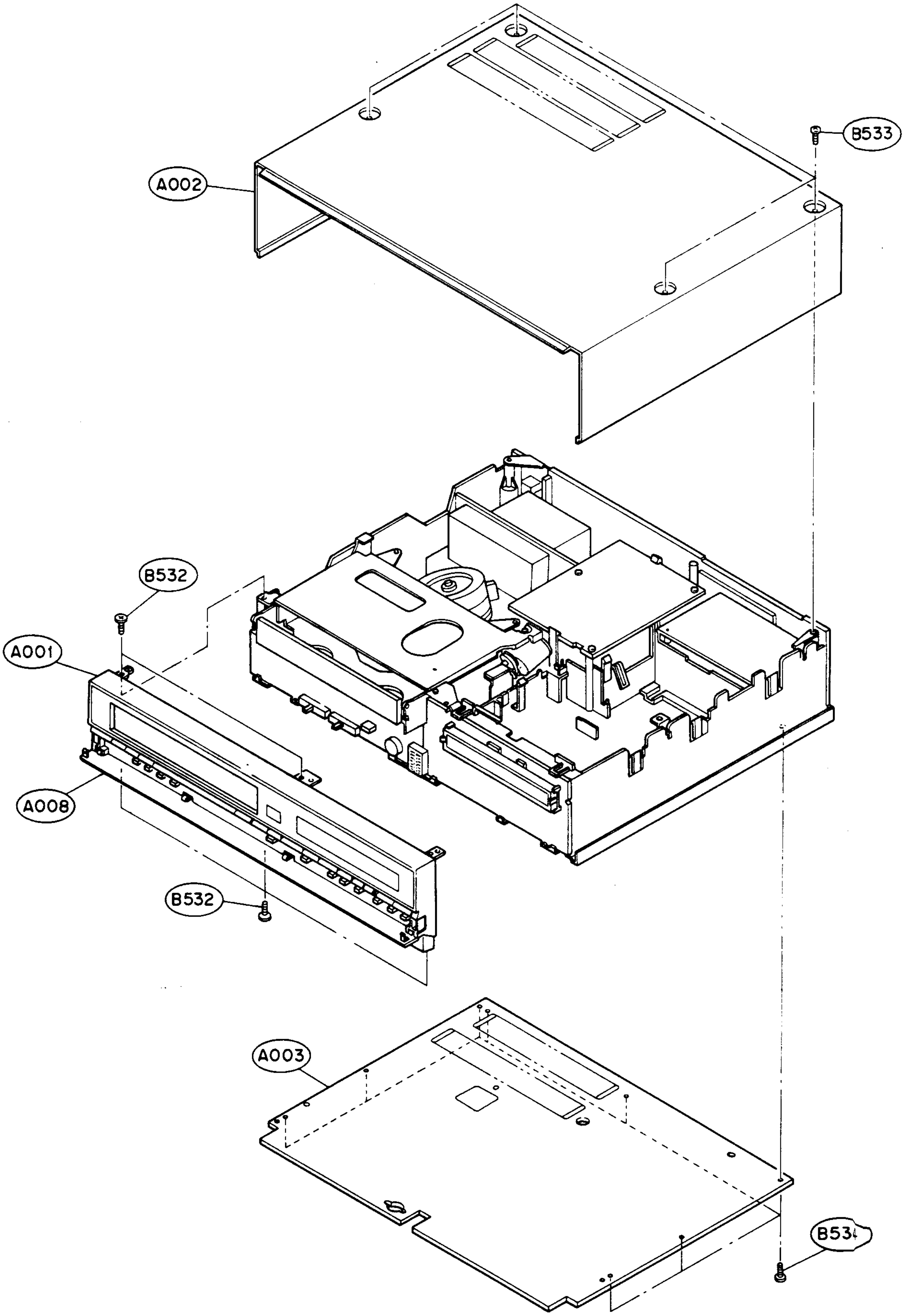


ACCESSORIES PARTS LIST

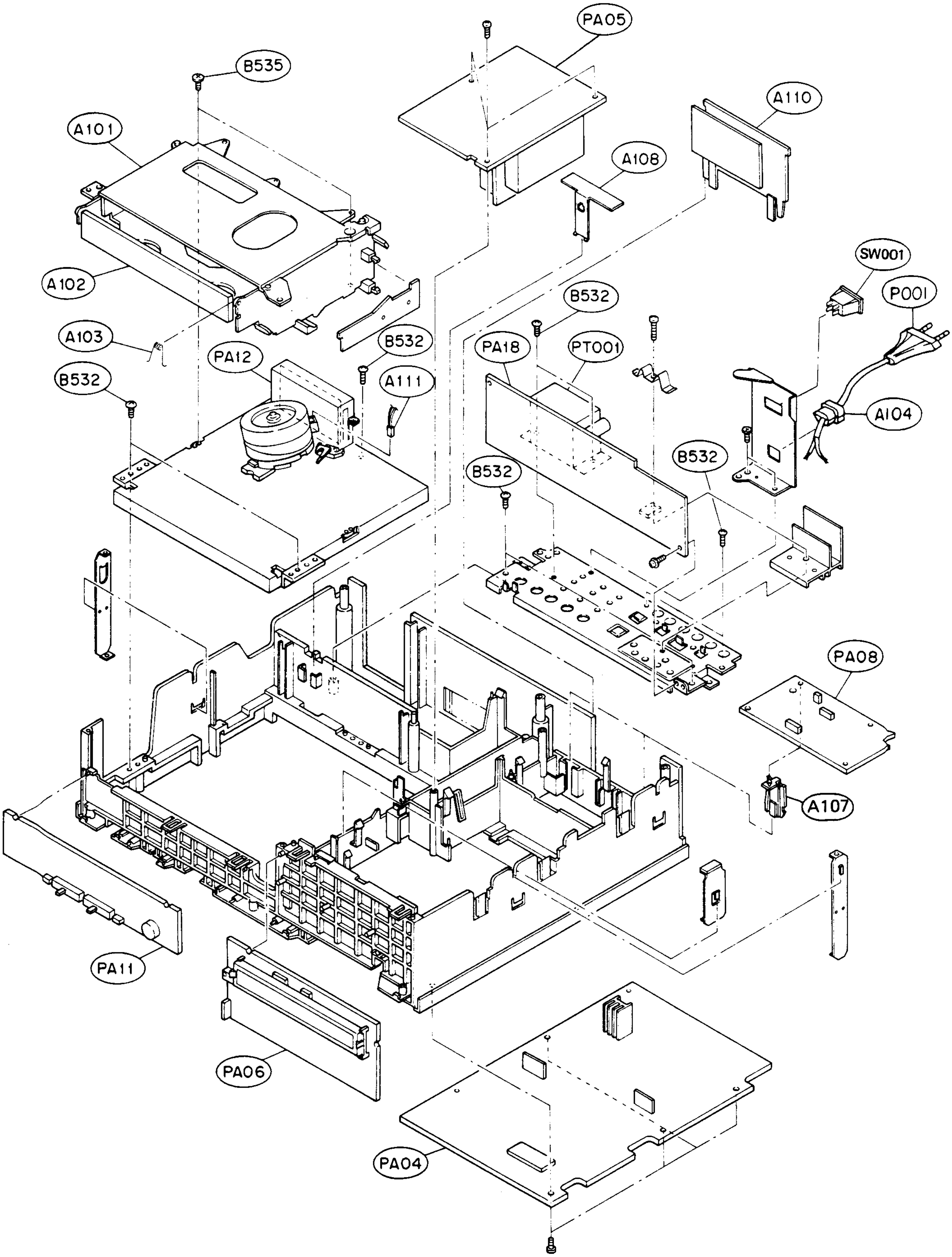
REF. NO	PART NO.	DESCRIPTION
K003	78816831	INSTRUCTION MANUAL (N9053G)
K007	79559054	IEC RF CABLE (1.2M)
K008	79799458	WIRELESS REMOTE CONTROL UNIT RB-53P

SECTION 5-1
EXPLODED VIEW (N9055G)

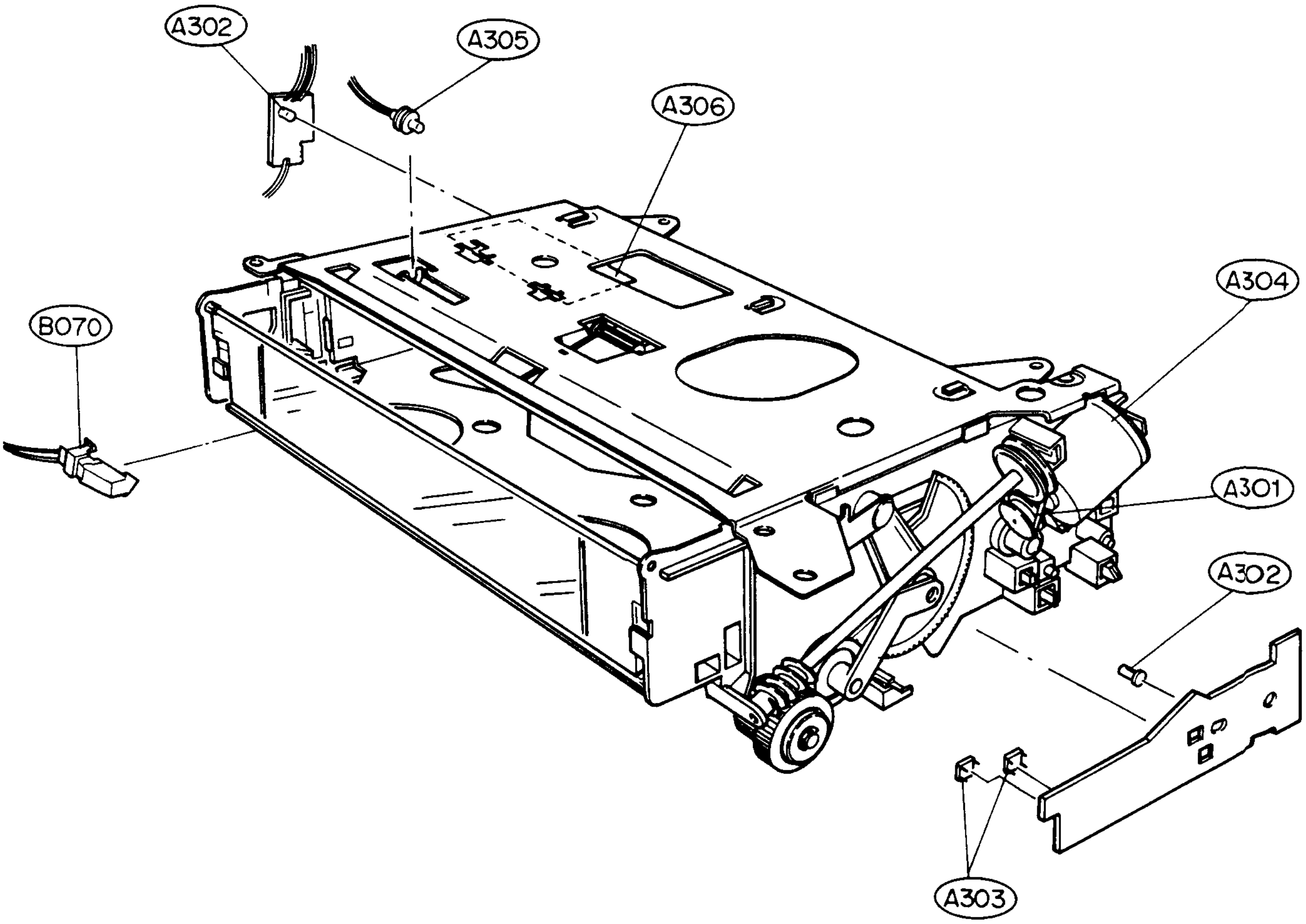
5-1. CABINET SECTION (N9055G)


B533
A002
B532
A001
A008
B532
A003
B534

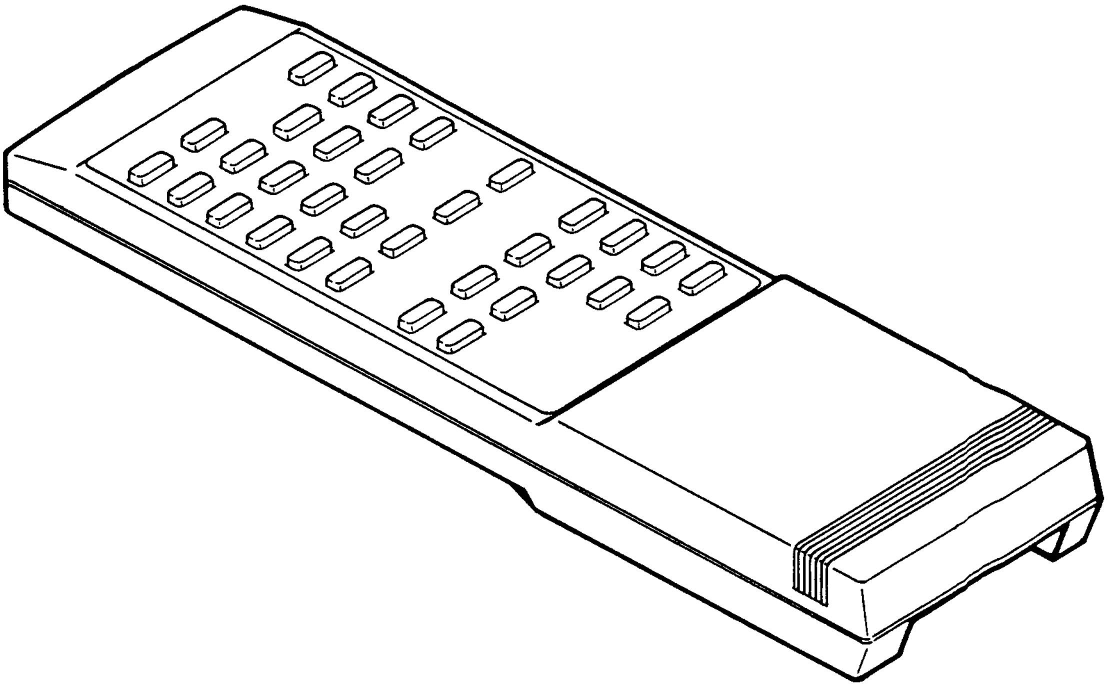
5-2. CHASSIS SECTION (N9055G)

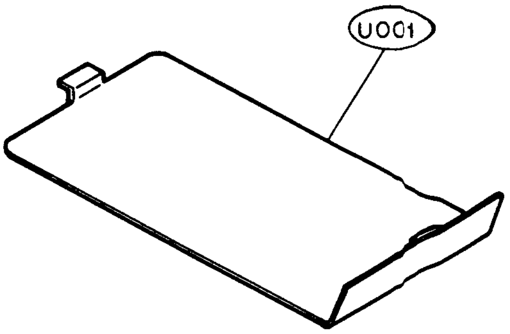

PA05
B535
A110
A101
A108
SW001
A102
B532
P001
A103
B532
PA12
A111
PA18
PT001
B532
A104
B532
B532
PA08
A107
PA11
PA06
PA04

5-3. CASSETTE HOUSING SECTION (N9055G)


A302
A305
A306
A304
B070
A301
A302
A303

5-4. WIRELESS REMOTE CONTROL SECTION (N9055G)



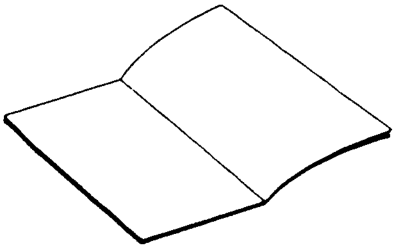


WIRELESS REMOTE CONTROL PARTS LIST

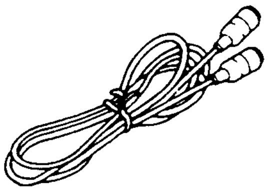
SYMBOL	PART NO.	DESCRIPTION	Q'TY
U001	18940256	BATTERY CASE	1

5-5. ACCESSORIES (N9055G)

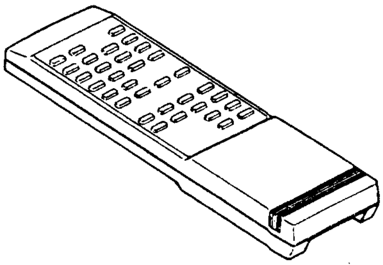
K003



K007



K008



REF. NO	PART NO.	DESCRIPTION
K003	78817031	INSTRUCTION MANUAL (N9055G)
K007	79559054	IEC RF CABLE (1.2M)
K008	79799460	WIRESS REMOTE CONTROL UNIT 55P

SECTION 6
REPLACEMENT PARTS LIST (N9053G)

87 07. 08

S/S/A/V PWB ASSY 6-2
PRE AMP PWB ASSY 6-5
JACK TERMINAL PWB ASSY 6-6
TIMER/FUNCTION PWB ASSY 6-7
TUNER/IF PWB ASSY. 6-7
ROWER/REGLATOR ASSY. 6-9
PACKING PARTS. 6-10
MECHANICAL PARTS 6-10
CASSETTE HOUSING ASSEMBLY 6-12
SET ASSEMBLY. 6-12
CHASSIS ASSEMBLY 6-12

MODEL : S/S/A/V PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** ICS ***	
IC1605	37101117	IC UPC324C	1
IC1604	37101127	IC UPC-393C	1
IC1103	37101246	IC BA6993	1
IC1402	37101249	BA7025L (SECAM DET)	1
IC1206	37101288	IC HA17805	1
IC1801	37101311	IC LA7098 (AUDIO)	1
IC1201	37101312	IC AN3215K (REC Y-PROCESS	1
IC1202	37101313	IC AN3321K (PB Y PROCESS)	1
IC1602 IC1603	37101323	IC BA15218 (OP AMP)	2
IC1208	37101326	IC LA7308	1
IC1401	37101334	IC PAL CHROMA(6163,6367)	1
IC1403	37151254	IC TK15061Z	1
IC1104	37151267	MOS MN1280R VOLTAGE DET	1
IC1102	37151334	IC BA6246	1
IC1601	37151336	MOS BU2733S (PAL SERVO)	1
IC1101	37151345	MOS UPD75208CW-116 N9053	1
IC1606	37901127	IC UPC7805H ACCESSORIES	1
		*** TRANSISTORS ***	
TR1801	35055312	TR 2SC2001 L	1
TR1101 TR1203 TR1209	355D1931	TR 2SC2785(E,F,H,J)AT	14
TR1211 TR1235 TR1236			
TR1255 TR1402 TR1404			
TR1407 TR1409 TR1410			
TR1411 TR1601			
TR1206 TR1207 TR1212	355D2716	TR,BA1F4M	11
TR1221 TR1234 TR1243			
TR1247 TR1254 TR1413			
TR1415 TR1419			
TR1103 TR1104 TR1603	355D2717	TR,BA1L4M	4
TR1604			
TR1403 TR1416	355K1131	TR,2SA1175 (E,F,H,J)	2
TR1242	355K2110	BN1F4M (A,22K) AT	1
TR1102	355K2111	BN1L4M (A,47K) AT	1
TR1208 TR1213 TR1220	355K2113	DTR UN4122(PNP 4.7K),AT	5
TR1253 TR1418			
		*** DIODES ***	
D1101 D1401	360KA009	DIODE 1S2473 AT20	2
D1102 D1103 D1105	360KA025	DIODE,1SS133	16
D1106 D1217 D1223			
D1224 D1402 D1601			
D1604 D1605 D1606			

MODEL : S/S/A/V PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
D1607 D1608 D1609	360KA025	DIODE,1SS133	16
D1614			
D1202	360KC972	DIODE MA165 AT26	1
D1108	36001025	DIODE 1SS133	1
ZD1101	36003112	DIODE,RD9.1EB-3	1
ZD1602	369KE167	ZENER DIODE RD6.2EB2,AT26	1
ZD1603	369KE198	ZENER DIODE RD16EB2,AT26	1
ZD1102	369KE445	ZENER DIODE RD12JB2,AT26	1
		*** VARIABLE RESISTORS ***	
X1101	39080022	4.19MHZ RESONATOR	1
RM1101	39906105	R,BLOCK220K*4 1.8MM 1/16W	1
RM1102	39906130	RBLOCK100K*7 1.8MM 1/16W	1
VR1201 VR1802	41951144	R,VARIABLE 2.2K,B	2
VR1213	41951146	R,VARIABLE 4.7K,B	1
VR1205	41951147	R,VARIABLE 6.8K,B	1
VR1402 VR1801	41951148	R,VARIABLE 10K,B	2
VR1204 VR1210	41951150	R,VARIABLE 22K,B	2
VR1202 VR1203 VR1206	41951152	R,VARIABLE 47K,B	3
VR1601 VR1602	41951154	R,VARIABLE 100K,B	2
VR1603	41951157	R,VARIABLE 330K,B	1
VR1401	41951249	R,VARIABLE 2.2KB	1
		*** COILS & FILTERS ***	
L1801 L1802	61082100	FILTER COIL 822J,AT	2
L1803	61061537	FILTER COIL 470UH AT(S)	1
L1205 L1404	61061545	FILTER COIL 2200UH	2
L1206 L1207 L1409	61061819	FILTER COIL 0405 15UH,AT	3
L1203 L1219 L1401	61061825	FILTER COIL 0405 47UH,AT	4
L1408			
L1202	61061826	FILTER COIL 0405 56UH,AT	1
L1204 L1210 L1211	61061829	FILTER COIL 0405 100UH,AT	9
L1216 L1217 L1406			
L1407 L1410 L1411			
L1403	61061833	FILTER COIL 0405 220UH,AT	1
L1402	61061835	FILTER COIL 0405 330UH,AT	1
L1601	61072132	COIL,FILTER 100UH	1
CF1401	61137009	CERAMIC FILTER 4.16MHZ	1
DL1401	61551046	DELAY (COMB FILTER)	1
DL1202	61551080	1HDLL(PAL,NOISE CANCEL)	1
FL1201	61827038	3.2MHZ L.P.F	1
FL1402	61827066	PAL 2IN1FILTER(5.06,1.4M)	1
FL1401	61827067	4.43MHZ BPF(3435)	1
T1401	61828014	LC FILTER (8KHZ TRAP)	1
T1801	61911215	OSC COIL	1

SYMBOL			PARTS NO	DESCRIPTION	QTY
	***	ELECTRICAL PARTS & MISCELLANEOUS PARTS			***
X1401			64004143	X'TAL 4.43MHZ (W/C-ADJ)	1
	***	APPEARANCE PARTS ***			
			16286431	PWB HINGE	1
			16288281	WIRERAP POST (STYLE PIN)	3
			16288391	PWB BRACKET(H7)	1
			16582421	HEAT SINK(1)	2
			16875531	SCREW M3*8*15BF	2
	***	RESISTORS ***			
R1822			401KE625	R,CARBON 10H 5% 1/6W	1
R1821			401KE631	R,CARBON 18H 5% 1/6W	1
R1437			401KE641	R,CARBON 47H 5% 1/6W	1
R1816			401KE643	R,CARBON 56H 5% 1/6W	1
R1248			401KE651	R,CARBON 120H 5% 1/6W	1
R1245			401KE653	R,CARBON 150H 5% 1/6W	1
R1229	R1415	R1660	401KE657	R,CARBON 220H 5% 1/6W	3
R1246			401KE659	R,CARBON 270H 5% 1/6W	1
R1421			401KE661	R,CARBON 330H 5% 1/6W	1
R1413	R1420		401KE665	R,CARBON 470H 5% 1/6W	2
R1236			401KE666	R,CARBON 510H 5% 1/6W	1
R1249	R1805		401KE667	R,CARBON 560H 5% 1/6W	2
R1225	R1235	R1240	401KE669	R,CARBON 680H 5% 1/6W	4
R1636					
R1418			401KE670	R,CARBON 750H 5% 1/6W	1
R1228	R1429	R1689	401KE671	R,CARBON 820H 5% 1/6W	3
R1213	R1219	R1233	401KE673	R,CARBON 1.0K 5% 1/6W	19
R1310	R1363	R1414			
R1416	R1417	R1423			
R1424	R1436	R1438			
R1447	R1454	R1629			
R1640	R1648	R1807			
R1815					
R1220	R1252	R1258	401KE675	R,CARBON 1.2K 5% 1/6W	6
R1412	R1419	R1812			
R1239	R1241	R1289	401KE677	R,CARBON 1.5K 5% 1/6W	5
R1299	R1313				
R1215	R1218	R1282	401KE679	R,CARBON 1.8K 5% 1/6W	7
R1283	R1404	R1641			
R1659					
R1148	R1151	R1207	401KE681	R,CARBON 2.2K 5% 1/6W	11
R1210	R1211	R1247			
R1425	R1441	R1444			
R1446	R1814				

SYMBOL			PARTS NO	DESCRIPTION	QTY
R1403	R1624	R1625	401KE683	R,CARBON 2.7K 5% 1/6W	3
R1622	R1646	R1655	401KE685	R,CARBON 3.3K 5% 1/6W	4
R1666					
R1802			401KE687	R,CARBON 3.9K 5% 1/6W	1
R1280	R1411	R1430	401KE689	R,CARBON 4.7K 5% 1/6W	4
R1809					
R1250	R1367	R1428	401KE691	R,CARBON 5.6K 5% 1/6W	10
R1432	R1433	R1442			
R1451	R1608	R1663			
R1664					
R1405	R1406	R1643	401KE693	R,CARBON 6.8K 5% 1/6W	4
R1644					
R1426	R1657		401KE695	R,CARBON 8.2K 5% 1/6W	2
R1813			401KE696	R,CARBON 9.1K 5% 1/6W	1
R1105	R1109	R1201	401KE697	R,CARBON 10K 5% 1/6W	10
R1216	R1244	R1296			
R1298	R1305	R1312			
R1448					
R1410	R1650		401KE699	R,CARBON 12K 5% 1/6W	2
R1121	R1122	R1221	401KE701	R,CARBON 15K 5% 1/6W	7
R1633	R1634	R1652			
R1653					
R1626	R1631	R1632	401KE703	R,CARBON 18K 5% 1/6W	4
R1637					
R1203	R1237	R1238	401KE705	R,CARBON 22K 5% 1/6W	8
R1304	R1445	R1803			
R1819	R1820				
R1300	R1301	R1658	401KE709	R,CARBON 33K 5% 1/6W	3
R1620			401KE711	R,CARBON 39K 5% 1/6W	1
R1103	R1107	R1606	401KE713	R,CARBON 47K 5% 1/6W	4
R1801					
R1627			401KE715	R,CARBON 56K 5% 1/6W	1
R1150	R1357	R1604	401KE717	R,CARBON 68K 5% 1/6W	3
R1603	R1638		401KE719	R,CARBON 82K 5% 1/6W	2
R1108	R1110	R1111	401KE721	R,CARBON 100K 5% 1/6W	14
R1408	R1409	R1422			
R1434	R1615	R1616			
R1628	R1639	R1642			
R1647	R1649				
R1635			401KE723	R,CARBON 120K 5% 1/6W	1
R1443			401KE725	R,CARBON 150K 5% 1/6W	1
R1222	R1609		401KE727	R,CARBON 180K 5% 1/6W	2
R1613			401KE731	R,CARBON 270K 5% 1/6W	1
R1618			401KE737	R,CARBON 470K 5% 1/6W	1
R1104			401KE739	R,CARBON 560K 5% 1/6W	1
R1804			401KE741	R,CARBON 680K 5% 1/6W	1
R1427	R1645	R1654	401KE745	R,CARBON 1.0M 5% 1/6W	3
R1811			40105674	R,CARBON 1.1K 5% 1/6W	1
R1455			40105709	R,CARBON 33K 5% 1/6W	1

MODEL : S/S/A/V PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
R1808			40105715	R,CARBON 56K 5% 1/6W	1
R1101			40351109	R,METAL 2.2H 5% 1W	1
R1602			40809801	R.FUSE 1.0H 5% 1/2W	1
R1601			40809841	R,FUSE 47H 5% 1/2W	1
R1823			409HB601	R,CARBON 1.0H 5% 1/4W	1
R1366	R1656		409HB649	R,CARBON 100H 5% 1/4W	2
R1452			409HB657	R,CARBON 220H 5% 1/4W	1
R1253			409HB659	R,CARBON 270H 5% 1/4W	1
R1106			409HB665	R,CARBON 470H 5% 1/4W	1
R1688			409HB670	R,CARBON 750H 5% 1/4W	1
R1156	R1157	R1158	409HB673	R,CARBON 1.0K 5% 1/4W	3
R1126	R1127	R1128	409HB681	R,CARBON 2.2K 5% 1/4W	19
R1129	R1130	R1131			
R1132	R1133	R1136			
R1137	R1138	R1139			
R1140	R1141	R1142			
R1144	R1145	R1146			
R1149					
R1675			409HB685	R,CARBON 3.3K 5% 1/4W	1
R1665			409HB691	R,CARBON 5.6K 5% 1/4W	1
R1607			409HB693	R,CARBON 6.8K 5% 1/4W	1
R1117	R1135	R1153	409HB697	R,CARBON 10K 5% 1/4W	4
R1362					
R1401	R1605		409HB699	R,CARBON 12K 5% 1/4W	2
R1134	R1407		409HB701	R,CARBON 15K 5% 1/4W	2
R1204	R1303	R1431	409HB705	R,CARBON 22K 5% 1/4W	3
R1123	R1124		409HB713	R,CARBON 47K 5% 1/4W	2
R1619			409HB717	R,CARBON 68K 5% 1/4W	1
R1617			409HB718	R,CARBON 75K 5% 1/4W	1
R1112	R1113	R1114	409HB721	R,CARBON 100K 5% 1/4W	7
R1119	R1120	R1125			
R1610					
R1651			409HB725	R,CARBON 150K 5% 1/4W	1
R1623			409HB729	R,CARBON 220K 5% 1/4W	1
R1118			409HB739	R,CARBON 560K 5% 1/4W	1
R1611			409HB745	R,CARBON 1.0M 5% 1/4W	1
R1810			409HB749	R,CARBON 1.5M 5% 1/4W	1
R1630			409HB751	R,CARBON 1.8M 5% 1/4W	1
R1612			409HB761	R,CARBON 4.7M 5% 1/4W	1
R1102			40912161	R,CARBON 330H 5% 1/2W	1
		***	CAPACITORS	***	
C1101	C1102	C1110	421A0425	C,CERAMIC 50V 0.01UF	3
C1111	C1119		421A0429	C,CERAMIC 50V 0.022UF	2
C1253			421CBC15	C,CERAMIC 50V 12 PF	1
C1291	C1421		421CBC17	C,CERAMIC 50V 15 PF	2

MODEL : S/S/A/V PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
C1266	C1268		421CBC19	C,CERAMIC 50V 18 PF	2
C1210	C1254		421CB027	C,CERAMIC 50V 39 PF	2
C1402			421CBC31	C,CERAMIC 50V 56 PF	1
C1206	C1236		421CBC35	C,CERAMIC 50V 82 PF	2
C1118	C1212	C1625	421CBC37	C,CERAMIC 50V 100PF	3
C1227	C1231		421CBC38	C,CERAMIC 50V 120PF	2
C1242			421CBC39	C,CERAMIC 50V 150PF	1
C1626			421CBC41	C,CERAMIC 50V 220PF	1
C1614			421CBC42	C,CERAMIC 50V 270PF	1
C1113	C1114	C1115	421CBC43	C,CERAMIC 50V 330PF	3
C1413			421CB044	C,CERAMIC 50V 390PF	1
C1229	C1646		421CBC45	C,CERAMIC 50V 470PF	2
C1245			421CBC47	C,CERAMIC 50V 680PF	1
C1107	C1205	C1407	421CBC49	C,CERAMIC 50V 1000PF	6
C1622	C1645	C1826			
C1305	C1406		421CB209	C,CERAMIC 50V 4.7 PF	2
C1411			421CB239	C,CERAMIC 50V 150PF	1
C1410			421CB240	C,CERAMIC 50V 180PF	1
C1419			421CB241	C,CERAMIC 50V 220PF	1
C1420			421CB245	C,CERAMIC 50V 470PF	1
C1431			421CB453	C,CERAMIC 16V 2200PF	1
C1648			421CB455	C,CERAMIC 16V 3300PF	1
C1105	C1106	C1109	421CB461	C,CERAMIC 16V 0.01UF	27
C1209	C1211	C1221			
C1222	C1232	C1244			
C1246	C1250	C1251			
C1252	C1255	C1256			
C1257	C1258	C1401			
C1408	C1415	C1416			
C1423	C1425	C1427			
C1429	C1443	C1444			
C1208	C1240	C1275	421CB863	C,CERAMIC 25V 0.022UF	9
C1288	C1294	C1424			
C1435	C1437	C1445			
C1446			421C0205	C.CERAMIC 50V 220PF	1
C1409	C1414		42110433	C,CERAMIC 50V 0.047UF	2
C1654			42132963	C,CERAMIC 25V 0.022UF	1
C1827			42331052	C,CERAMIC 50V 200PF	1
C1104			42900333	C,CERAMIC 25V 0.047UF	1
C1249			42900337	C,CERAMIC 25V 0.1UF	1
C1627			429G6908	C FILM 50V 0.039UF	1
C1605	C1629		429G6912	C,FILM 50V 0.082UF	2
C1290	C1624		429G6913	C-FILM 50V 0.1UF	2
C1634			429G6919	C,METAL FILM 50V 0.33UF	1
C1824			429G8251	C,METAL FILM 50V 1000PF	1
C1606	C1823		429G8253	C,METAL FILM 50V 1500PF	2
C1814			429G8259	C,METAL FILM 50V 4700PF	1
C1628			429G8261	C,METAL FILM 50V 6800PF	1

MODEL : S/S/A/V PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
C1603			42968263	C,METAL FILM 50V 0.01UF	1
C1808	C1809		42968264	C,METAL FILM 50V 0.012UF	2
C1607			42968267	C,METAL FILM 50V 0.022UF	1
C1604	C1815		42968268	C,METAL FILM 50V 0.027UF	2
C1801			42968471	C,FILM 50V 680PF 5%	1
C1825			42974161	C,FILM 100V 0.033UF 5%	1
C1235			42976547	CQ92V1H561J.A	1
C1243			42976731	C,FILM 50V 0.33 UF 5%	1
C1122			42976812	C METAL FILM 50V 0.082UF	1
C1805			42978159	C,METAL FILM 50V 4700PF	1
C1224			430A8101	C,ELEC 6.3V 22UF	1
C1233	C1241	C1276	430A8103	C,ELEC 6.3V 47UF	13
C1287	C1403	C1422			
C1434	C1439	C1440			
C1612	C1616	C1618			
C1632					
C1120	C1207	C1441	430A8104	C,ELEC 6.3V 100UF	4
C1613					
C1609	C1615	C1623	430A8105	C,ELEC 10V 22UF	3
C1108	C1289	C1293	430A8109	C,ELEC 16V 10UF	12
C1432	C1610	C1611			
C1617	C1619	C1620			
C1631	C1647	C1813			
C1811	C1822		430A8110	C,ELEC 16V 22UF	2
C1436			430A8111	C,ELEC 16V 33UF	1
C1286	C1298	C1807	430A8112	C,ELEC 16V 47UF	8
C1810	C1812	C1819			
C1820	C1821				
C1103			430A8113	C,ELEC 16V 100UF	1
C1223			430A8114	C,ELEC 25V 4.7UF	1
C1601			430A8118	C,ELEC 25V 47UF	1
C1226	C1248	C1267	430A8119	C,ELEC 35V 3.3UF	3
C1630			430A8124	C,ELEC 50V 0.1UF	1
C1404			430A8125	C,ELEC 50V 0.22UF	1
C1216	C1228	C1405	430A8128	C,ELEC 50V 1UF	5
C1621	C1633				
C1225	C1433		430A8129	C,ELEC 50V 2.2UF	2
C1117			430A8130	C,ELEC 50V 3.3UF	1
C1112			430A8131	C,ELEC 50V 4.7UF	1
C1608			430A8144	C,ELEC 6.3V 220UF,AT	1
C1121			43011060	C,ELEC 35V 100UF	1
C1220			433A4164	C,ELEC 50V 3.3UF-5ESRA,AT	1
C1818			439A1583	C,ELEC 10UF 16V	1
C1804			439A1602	C,ELEC 1UF 50V	1
C1116			439J3027	C,ELEC 16V 47UF	1
C1602			43083304	C,ELEC 6.3V 470UF	1

MODEL : PRE AMP PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
				*** ICS ***	
IC501			37151238	IC AN6326N (HEAD AMP)	1
				*** TRANSISTORS ***	
TR501	TR502	TR505	355D1931	TR 2SC2785(E,F,H,J)AT	5
TR506	TR507				
TR503			35543200	TR,2SC2188	1
TR504			35562244	TR,2SD639 R,S	1
				*** COILS & FILTERS ***	
L508			610G1545	FILTER COIL 2200UH	1
L506			610G1818	FILTER COIL 0405 12UH,AT	1
L501			610G1819	FILTER COIL 0405 15UH,AT	1
L504			610G1821	FILTER COIL 0405 22UH,AT	1
L505			610G1825	FILTER COIL 0405 47UH,AT	1
L510			610G1826	FILTER COIL 0405 56UH,AT	1
L502	L503		610G1829	FILTER COIL 0405 100UH,AT	2
				*** APPEARANCE PARTS ***	
			16582291	SHIELD CASE COVER A	1
			16582301	SHIELD CASE COVER B	1
			16582311	SHIELD CASE FRAME	1
				*** RESISTORS ***	
R509	R510		401KE625	R,CARBON 10H 5% 1/6W	2
R508			401KE633	R,CARBON 22H 5% 1/6W	1
R506			401KE643	R,CARBON 56H 5% 1/6W	1
R504			401KE649	R,CARBON 100H 5% 1/6W	1
R505	R518		401KE657	R,CARBON 220H 5% 1/6W	2
R515			401KE659	R,CARBON 270H 5% 1/6W	1
R507	R511	R528	401KE661	R,CARBON 330H 5% 1/6W	3
R503	R520		401KE669	R,CARBON 680H 5% 1/6W	2
R517			401KE671	R,CARBON 820H 5% 1/6W	1
R514	R516	R519	401KE673	R,CARBON 1.0K 5% 1/6W	4
R522					
R513	R521	R523	401KE677	R,CARBON 1.5K 5% 1/6W	3
R502			401KE679	R,CARBON 1.8K 5% 1/6W	1
R530			401KE685	R,CARBON 3.3K 5% 1/6W	1
R501			401KE693	R,CARBON 6.8K 5% 1/6W	1
R512	R524	R525	401KE697	R,CARBON 10K 5% 1/6W	3

MODEL : PRE AMP PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
				*** CAPACITORS ***	
C501			421CBC17	C,CERAMIC 50V 15 PF	1
C516			421CBC25	C,CERAMIC 50V 33 PF	1
C518			421CBC35	C,CERAMIC 50V 82 PF	1
C525			421CBC46	C,CERAMIC 50V 560PF	1
C517			421CB451	C,CERAMIC 16V 1500PF	1
C506			421CB457	C,CERAMIC 16V 4700PF	1
C508	C509	C519	421CB461	C,CERAMIC 16V 0.01UF	3
C504	C513	C515	421CB863	C,CERAMIC 25V 0.022UF	4
C524					
C507	C510		421J9C09	C,CERAMIC 50V 0.022UF	2
C502			429C0337	C,CERAMIC 25V 0.1UF	1
C505			42930337	C,CERAMIC 25V 0.1UF	1
C512	C514		430A8107	C,ELEC 10V 47UF	2
C521			430A8109	C,ELEC 16V 10UF	1
C503			430A8112	C,ELEC 16V 47UF	1
C511			430A8125	C,ELEC 50V 0.22UF	1

MODEL : JACK TERMINAL PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
C901	43983306	CE04C0J471 (NEW SS)	1
C902	430A8112	CE04C1C470-5BSRA,AT	1
C903	430A8110	CE04C1C220-5BSRA,AT	1
C904	430A8110	CE04C1C220-5BSRA,AT	1
C905	430A8110	CE04C1C220-5BSRA,AT	1
C906	430A8112	CE04C1C470-5BSRA,AT	1
C907	430A8112	CE04C1C470-5BSRA,AT	1
C908	430A8128	CE04C1H010-5BSRA,AT	1
D901	360KA025	DIODE 1SS133, AT26	1
IC901	37101250	IC BA7026L	1
JK901	79V06321	A/V CONNECTOR (21P)	1
L901	610G2775	FILTER COIL L101J, BT ELEPK, A	1
L902	610G2775	FILTER COIL L101J, BT ELEPK, A	1
MD901	34354028	RF, MODULATOR (PAL. I 36) AL2	1
R901	401KE673	RD1/6PTY1.0KJ,AT26	1
R902	401KE646	RD1/6PTY75HJ,AT26	1
R903	401KE665	RD1/6PTY470HJ,AT26	1
R904	401KE646	RD1/6PTY75HJ,AT26	1
R905	401KE673	RD1/6PTY1.0KJ,AT26	1
R906	401KE673	RD1/6PTY1.0KJ,AT26	1
TR901	35902912	TRANSISTOR 2SA 952 L	1
LPF901	69699005	DS310-55B271	1
LPF902	69699005	DS310-55B271	1
C909	42311100	CC45SL1H391J.B	1
C910	42311100	CC45SL1H391J.B	1
C911	42331045	CC45SL1H101J, A	1

MODEL : TIMER/FUNCTION PWB A

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** DIODES ***	
D2001 D2002 D2003 D2004 D2005 D2006 D2007 D2008 D2009 D2010 D2011 D2012 D2013 D2015 D2016 D2017 D2018 D2023	360KA025	DIODE,1SS133	18
		*** VARIABLE RESISTORS ***	
VR2002	41504201	VR 20KB K121LC L=20	1
VR2001	41950550	VOLUME 500KB	1
		*** RELAYS & SWITCHES ***	
SW2019 SW2029	65180052	SLIDE SW 1-1-2	2
SW2018	65180060	SW,SLIDE	1
SW2001 SW2002 SW2003 SW2004 SW2005 SW2006 SW2007 SW2008 SW2009 SW2010 SW2011 SW2012 SW2013 SW2015 SW2016 SW2017	65330052	TACT SWITCH	16
		*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***	
FD2001	67930071	FIP FIP8CHM7	1
		*** APPEARANCE PARTS ***	
	16443535	FIP HOLDER	1
		*** RESISTORS ***	
R2001	401KE729	R,CARBON 220K 5% 1/6W	1
		*** CAPACITORS ***	
C2001	43016109	C,ELEC 16V 10UF	1

MODEL : TUNER/IF PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** CRT & TUNER ***	
	34393021	U/V TUNER(CATV)	1
		*** ICS ***	
IC3001	37101240	IC LA7530	1
IC3103	37101284	IC LA7210	1
IC3102	37151340	MOS CXK1005P (32W)	1
IC3101	37903162	IC LA7910 (X02600)	1
		*** TRANSISTORS ***	
TR3108	35004113	TR,2SA916 M	1
TR3104	35055312	TR 2SC2001 L	1
TR3105	35058012	TR 2SC2352 L	1
TR3003 TR3102 TR3106 TR3107	35501931	TR 2SC2785(E,F,H,J)AT	4
TR3001 TR3002 TR3101 TR3103	355K1131	TR,2SA1175 (E,F,H,J)	4
TR3004	35940502	TR,2SC1730 L	1
		*** DIODES ***	
D3101 D3102 D3103 D3104 D3105 D3106	360KA025	DIODE,1SS133	6
ZD3101	36003049	ZENER DIODE UPC-574J	1
		*** VARIABLE RESISTORS ***	
X3101	39080012	CERAMIC RESO. CSB500E5	1
VR3101	41951148	R,VARIABLE 10K,B	1
		*** COILS & FILTERS ***	
L3003	61062765	COIL FILTER	1
L3004	61062773	COIL FILTER	1
L3005	61011531	SAW COIL 1R8	1
L3002	61011535	SAW COIL 2R7	1
FL3002	61107034	CERAMIC DISCRIMINATER	1
FL3003	611K5012	SIF FILTER 5.5MHZ	1
FL3004	61137037	CERAMIC TRAP TPS5.5MW	1
FL3001	61138023	VIF SAWF SAF38.9MZR72Z	1
T3001 T3002	61815155	V.IFT (9.5TURN)	2

MODEL : TUNER/IF PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
			***	ELECTRICAL PARTS & MISCELLANEOUS PARTS	***
			70780009	CABLE,CONNECTOR (110MM)	1
			***	APPEARANCE PARTS ***	
			16582402	TUNER SHIELD CASE	1
			***	RESISTORS ***	
R3037			401KE625	R,CARBON 10H 5% 1/6W	1
R3035	R3152		401KE641	R,CARBON 47H 5% 1/6W	2
R3025			401KE645	R,CARBON 68H 5% 1/6W	1
R3036			401KE649	R,CARBON 100H 5% 1/6W	1
R3023			401KE653	R,CARBON 150H 5% 1/6W	1
R3032			401KE657	R,CARBON 220H 5% 1/6W	1
R3003			401KE659	R,CARBON 270H 5% 1/6W	1
R3009	R3011	R3145	401KE661	R,CARBON 330H 5% 1/6W	3
R3024			401KE663	R,CARBON 390H 5% 1/6W	1
R3004	R3020		401KE665	R,CARBON 470H 5% 1/6W	2
R3018	R3038		401KE669	R,CARBON 680H 5% 1/6W	2
R3007	R3015	R3017	401KE673	R,CARBON 1.0K 5% 1/6W	5
R3019	R3143				
R3142			401KE675	R,CARBON 1.2K 5% 1/6W	1
R3010	R3034	R3102	401KE681	R,CARBON 2.2K 5% 1/6W	8
R3103	R3129	R3130			
R3131	R3132				
R3110			401KE685	R,CARBON 3.3K 5% 1/6W	1
R3134			401KE687	R,CARBON 3.9K 5% 1/6W	1
R3002	R3012	R3022	401KE689	R,CARBON 4.7K 5% 1/6W	6
R3118	R3119	R3123			
R3005			401KE691	R,CARBON 5.6K 5% 1/6W	1
R3021			401KE693	R,CARBON 6.8K 5% 1/6W	1
R3111	R3112		401KE697	R,CARBON 10K 5% 1/6W	2
R3033			401KE699	R,CARBON 12K 5% 1/6W	1
R3141			401KE701	R,CARBON 15K 5% 1/6W	1
R3114	R3115	R3116	401KE703	R,CARBON 18K 5% 1/6W	4
R3146					
R3113	R3125	R3126	401KE705	R,CARBON 22K 5% 1/6W	7
R3127	R3128	R3135			
R3136					
R3008			401KE707	R,CARBON 27K 5% 1/6W	1
R3013	R3108	R3109	401KE713	R,CARBON 47K 5% 1/6W	6
R3149	R3150	R3153			
R3147			401KE717	R,CARBON 68K 5% 1/6W	1
R3006	R3014	R3105	401KE721	R,CARBON 100K 5% 1/6W	3

MODEL : TUNER/IF PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
R3120			401KE725	R,CARBON 150K 5% 1/6W	1
R3107			401KE729	R,CARBON 220K 5% 1/6W	1
R3144			401KE733	R,CARBON 330K 5% 1/6W	1
R3104	R3106		401KE737	R,CARBON 470K 5% 1/6W	2
R3133			40809989	R,FUSE 2.2H 5% 1/4W	1
R3137	R3138		409HB721	R,CARBON 100K 5% 1/4W	2
R3027	R3031	R3148	40913109	R,CARBON 2.2H 5% 1/4W	3
			***	CAPACITORS ***	
C3110			4210BC43	C,CERAMIC 50V 330PF	1
C3109	C3113		4210BC49	C,CERAMIC 50V 1000PF	2
C3007	C3009	C3010	4210B461	C,CERAMIC 16V 0.01UF	12
C3014	C3015	C3020			
C3031	C3032	C3033			
C3034	C3101	C3116			
C3001	C3002		421DB133	C,CERAMIC 25V 0.01UF	2
C3120			42110425	C,CERAMIC 50V 0.01UF	1
C3004			423A2C15	C,CERAMIC 50V 10PF	1
C3018			423A2C25	C,CERAMIC 50V 15PF	1
C3025			423A6C03	C,CERAMIC 50V 3PF	1
C3011	C3012		423A6C40	C,CERAMIC 50V 62PF	2
C3107			42966921	C,METAL FILM 50V 0.47UF	1
C3005			42968267	C,METAL FILM 50V 0.022UF	1
C3008			430A8109	C,ELEC 16V 10UF	1
C3019			430A8110	C,ELEC 16V 22UF	1
C3016	C3021	C3102	430A8112	C,ELEC 16V 47UF	4
C3115					
C3111	C3114		430A8127	C,ELEC 50V 0.47UF	2
C3003	C3108	C3112	430A8128	C,ELEC 50V 1UF	3
C3006			430A8130	C,ELEC 50V 3.3UF	1
C3106			430B6068	C,ELEC 50V 47UF	1
C3103	C3104	C3105	439HC049	C,ELEC 50V 0.22UF	3

MODEL : POWER REGULATER ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
D002	36107522	RECTIFIER, SI ERA15-02	1
D003	36107522	RECTIFIER, SI ERA15-02	1
D004	79VA0007	DIODE ERA15-01 UBC0125AZ	1
D005	79VA0007	DIODE ERA15-01 UBC0125AZ	1
D006	79VA0007	DIODE ERA15-01 UBC0125AZ	1
D007	79VA0007	DIODE ERA15-01 UBC0125AZ	1
D008	79VA0007	DIODE ERA15-01 UBC0125AZ	1
D009	36003954	DIODE 1S2076A	1
IC001	79VA0003	IC M5237L UCZ0097ZZ	1
IC002	79VA0004	IC PQ12R02 UCB0028AZ	1
R002	79VA0016	1/4W220HJ, B(7.5)	1
R003	79VA0016	1/4W220HJ, B(7.5)	1
R004	79VA0025	PS1PC910HJ, S	1
R006	79VA0010	1/4W33KGB(7.5)	1
R007	79VA0011	1 / 4W4.3KGB(7.5)	1
R008	79VA0012	1/4W0.22HM, A	1
R009	79VA0013	1W0.47HK, S	1
R010	79VA0014	1/4W2.7KJ, B(7.5)	1
R011	79VA0026	1 / 4W33KJ, B(7.5)	1
R012	79VA0014	1/4W2.7KJ, B(7.5)	1
R013	79VA0016	1/4W220HJ, B(7.5)	1
R014	79VA0017	1/4W1.2KJ, B(7.5)	1
R015	79VA0018	1/4W10KJ, B(7.5	1
R016	79VA0018	1 / 4W10KJ, B(7.5)	1
R017	79VA0011	1/4W4.3KGB(7.5	1
R018	79VA0019	1/4W680HJ, B(7.5	1
R020	79VA0020	1/4W22KJ, B(7.5	1
TR001	35520817	TR, 2SB949 Q	1
TR002	35003516	TR, 2SA733/733A P	1
TR003	35920916	TR, 2SB548 P	1
TR004	35170505	TR, AA1A4M	1
TR005	79VA0005	2SD1266 UAD0090CZ	1
TR006	35170501	TR, AA1A4M	1
TR007	79VA0006	2SD1286 UAD0089AZ	1
TR008	35541931	TR, 2SC2785(E, F, H, J)	1
ZD001	36905164	ZENER DIODE RD5.6EB2(A)	1
C002	43026058	C, ELEC 35V 1000UF	1
C003	79VA0021	CE04W1J101MA UGAG101BU	1
C004	43026041	CE04W1E470MA	1
C005	43026034	CE04W1C222MA	1
C006	42976509	CQ92V1H472J, A	1
C007	43026048	CE04W1E332MA	1
C008	43026028	CE041C470MA	1
C009	43026045	CE04W1E471MA	1
C010	43026040	CE04W1E330MA	1
C011	42311045	CC45SL1H101J, B	1
C012	79VA0023	CE04W2A101MA UGAJ101BU	1
C013	79VA0063	CE04W1H010MA UGAF1ROBU	1
C015	42976525	CQ92V1H104J.A	1
SW001	79VA0071	SWITCH PJC0136ZZ	1

SMODEL : POWER/REGULATOR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
PT001	79VA0073	TRANSFORMER NH1309	1
F001	66671005	FUSE SET 2A 250V	1
F091	66671005	FUSE SET 2A 250V	1
PC001	79VA0075	POWER SUPPLY CORD IEC EHS0291ZZ	1
L091	79VA0076	CHOKE COIL FK0B160MH15	1
C091	79VA0074	0.1UF UGZ0326ZZ	1
	18292501	WIRE CLAMPER #2104	1

MODEL : PACKING ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***	
K007	79799458	REMOCON UNIT RB-53P	1
		*** APPEARANCE PARTS ***	
K011	16830121	PACKAGE	1
K009	16832952	CUSHION(FRONT)	1
K010	16832961	CUSHION(REAR)	1
K012	16833311	CARTON BOX N9053G	1
		*** PRINTED & PACKING MATERIALS ***	
KC03	78816831	INSTRUCTION BOOK N9053G	1
	79559054	IEC RF CABLE (1.2M)	1

MODEL : MECHANICAL PARTS

SYMBOL	PARTS NO	DESCRIPTION	QTY
B003	16177871	S. SOFT BRAKE ARM ASSY	1
B004	16177882	TU.SOFT BRAKE ARM ASSY	1
B005	16177922	LOADING UP ASSY	1
B006	16177932	LOADING LOW ASSY	1
B007	16178003	C.BRAKE ASSY	1
B010	16178062	S.REEL DISK ASSY	1
B012	16178301	EARTH PLATE S.A.	1
B015	16178392	MODE GEAR ASSY	1
B009	16179853	REEL DISK ASSY (2)	1
B071	16180503	IMPEDANCE ROLLER ASSY	1
B011	16180801	R.IDLER ASSY	1
B001	16183542	TENSION ARM ASSY(M2)	1
B002	16183551	TENSION BAND ASSY(M2)	1
B013	16183561	BRAKE ARM(R)ASSY(M2)	1
B014	16183571	BRAKE ARM (L)ASSY(M2)	1
B091	16183581	CONNECTED ARM ASSY	1
B092	16183591	LOCK LEVER ASSY	1
B094	16183611	S LINK ARM ASSY	1
B095	16183632	S LINK ASSY	1
B016	16183642	REVERSE ARM ASSY	1
B066	16183653	PINCH ROLLER ARM ASSY(M2)	1
B069	16183671	MODE CAM ASSY(M2)	1
B073	16183981	LED HOLDER ASSY (M2)	1
B093	16184071	BRAKE LINK ARM ASSY (DC)	1
B084	16184371	R.DRIVE ASSY (M2)	1
B067	16184381	PINCH.LINK ASSY	1
B018	16287641	NUT	4
B019	16288381	CLAMPER	1
B020	16442101	GUIDE ROLLER	6
B021	16442111	GUIDE ROLLER HOLDER	3
B022	16442121	GEAR (1)	1
B023	16442131	GEAR (2)	1
B024	16442161	DRIVE BELT	1
B027	16443362	GEAR	1
B028	16444374	G.P CAP	1
B098	16448341	ACE CODE CRAMPER	1
B029	16534121	COLLAR	2
B030	16534231	FRANGE	2
B031	16534251	COLLER	2
B032	16534262	PIN	1
B082	16534971	TAPER FLANGE	1

MODEL : MECHANICAL PART

SYMBOL	PARTS NO	DESCRIPTION	QTY
B035	16578922	SPRING	1
B036	16578941	SPRING	1
B037	16578972	GUIDE PIN SPRING	1
B042	16579172	SPRING	1
B068	16579261	PINCH LINK SP.PLATE	2
B044	16579911	SPRING (REV.ARM)	1
B087	16580681	IMPEDANCE ROLLER SPRING(C	1
B041	16580762	C.BRAKE SPRING (3)	1
B100	16582031	BRAKE LINK(2)	1
B101	16582041	LINK RETURN SPRING	1
B102	16582051	LOCK LEVER SPRING	1
B033	16582161	TENSION SPRING(M2)	1
B104	16582201	BRAKE LINK(1)	1
B089	16582611	IP SPRING NO.2(T)	1
B038	16582761	S.SOFT BRAKE SPRING	1
B039	16582771	TU.SOFT BRAKE SPRING	1
B090	16582931	SPRING (T.A)	1
B047	16629291	SLIT WASHER	1
B049	16629382	SLIT WASHER	2
B051	16629412	SLIT WASHER	3
B052	16629422	SLIT WASHER	1
B050	16630591	SLIT WASHER	9
B512	16875871	SCREW,S M3X5X15BF	3
B504	16877841	SCREW,2.6*8*15BF	3
B505	16878191	SPECIAL SCREW	4
B534	18886201	SPECIAL SCREW	2
B072	79501111	FE HEAD	1
B060	79501144	ACE HEAD ASSY(M2 MONO)	1
B055	79502073	CAPSTAN MOTOR BHF-3105A	1
B061	82417PM1	MODE SENSOR SASSY	1
B058	82601BB1	S.SLANT BASE SASSY	1
B059	82601BC1	TU.SLANT BASE SASSY	1
B108	82642PJ1	JUNCTION PWB SASSY	1
B057	82674AA1	HEAD DRUM SASSY(P/S-DEV2)	1
B506	91002331	SCREW L-CPIMS*2.6*15BF	2
B096	16286981	WASHER D3.1 T0.5	1
B099	16535261	ACE ADJUST PLATE	1
B511	16875541	SCREW M3*10*15BF	3
B510	16877711	PL-CPIMS*2.6*5*15BF	1

MODEL : MECHANICAL PART

SYMBOL	PARTS NO	DESCRIPTION	QTY
B107	73200033	CONNECTER TEG-P08X-A1	1
B088	82515AH1	ROTARY DRUM S.A(PA,SE-2H)	1
B502	910F3031	SCREW,PL-CPIMS*3*6*15BF	3
B508	91012011	SCREW CPIMS*2*4*15BF	1
B501	91012361	SCREW,CPIMS*2.6*10*15BF	3
B078	16629252	LOADING BELT	1
B074	36904255	LED GL450	1

MODEL : CASSETTE HOUSING ASSEMBLY

SYMBOL	PARTS NO	DESCRIPTION	QTY
A301	16441731	LOADING BELT	1
A302	35290301	PHOTO TR PT361	2
A303	65330045	TACT SWITCH	2
A304	79502029	DC MICRO MOTOR RF-280R-10350	1
B070	65907089	REC SAFETY SW	1

MODEL : SET ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
A110	71129C58	JACK TERMINAL	1
A101	16183864	CASSETTE HOUSE ASSY	1
A001	16184431	FRONT PANEL ASSY N9C53G	1
A002	16375861	TOP COVER	1
A102	16448801	FRONT COVER	1
A005	16478461	KNOB,TRACKING	2
A103	16573831	FRONT COVER SPRING	1
A003	16582361	BOTTOM PLATE	1
A108	16631221	FUSE COVER(3)	1
B532 B533	16876431	SCREW,FTB4X12X15BF	12
B533	16878171	SCREW (TOP)	4
B534	188E6201	SPECIAL SCREW	9

MODEL : CHASSIS ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** PWB ASSYS ***	
PA04	81683D01	S/S/A/V PWB ASSY	1
PA05	81683E01	TUNER/IF PWB ASSY	1
PA06	81683F01	TIMER/FUNCTION PWB ASSY	1
PA12	81683L01	PRE AMP PWB ASSY	1

SECTION 6-1

REPLACEMENT PARTS LIST (N9055G)

87. 07. 13

S/S/V PWB ASSY 6-1-2
PRE AMP PWB ASSY 6-1-5
JACK TERMINAL PWB ASSY 6-1-6
NORMAL AUDIO PWB ASSY 6-1-7
TIMER/FUNCTION PWB ASSY 6-1-8
SUB FUNCTION PWB ASSY 6-1-9
TUNER/IF PWB ASSY 6-1-9
POWER REGULATOR ASSY 6-1-11
PACKING PARTS 6-1-12
MECHANICAL PARTS 6-1-12
CASSETTE HOUSING ASSEMBLY 6-1-14
SET ASSEMBLY 6-1-14
CHASSIS ASSEMBLY 6-1-14

MODEL : SYS/SER/VID PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** ICS ***	
IC1605	37101117	IC UPC324C	1
IC1604	37101127	IC UPC-393C	1
IC1402	37101249	BA7025L (SECAM DET)	1
IC1607	37101268	IC BA235	1
IC1609	37101274	IC BA236	1
IC1206	37101288	IC HA17805	1
IC1201	37101312	IC AN3215K (REC Y-PROCESS	1
IC1202	37101313	IC AN3321K (PB Y PROCESS)	1
IC1602 IC1603	37101323	IC BA15218 (OP AMP)	2
IC1208	37101326	IC LA7308	1
IC1401	37101334	IC PAL CHROMA(6163,6367)	1
IC1608	37151116	MOS UPD4011BC	1
IC1610	37151249	MOS UPD4538BC (NEC-B)	1
IC1403	37151254	IC TK15C61Z	1
IC1103	37151267	MOS MN1280R VOLTAGE DET	1
IC1102	37151334	IC BA6246	1
IC1601	37151336	MOS BU2733S (PAL SERVO)	1
IC1101	37151369	MOS UPD75106CW-058 N916S3	1
		*** TRANSISTORS ***	
TR1609	35065416	TR,2SD882 P	1
TR1203 TR1209 TR1211	355D1931	TR 2SC2785(E,F,H,J)AT	14
TR1235 TR1236 TR1255			
TR1402 TR1404 TR1407			
TR1409 TR1410 TR1411			
TR1601 TR1608			
TR1101 TR1206 TR1207	355D2716	TR,BA1F4M	12
TR1212 TR1221 TR1234			
TR1243 TR1247 TR1254			
TR1413 TR1415 TR1419			
TR1103 TR1603 TR1604	355D2717	TR,BA1L4M	6
TR1607 TR1610 TR1612			
TR1403 TR1416 TR1611	355K1131	TR,2SA1175 (E,F,H,J)	3
TR1242	355K2110	BN1F4M (A,22K) AT	1
TR1208 TR1213 TR1220	355K2113	DTR UN4122(PNP 4.7K),AT	5
TR1253 TR1418			
TR1102	3556251P	TR 2SD1227M R	1
		*** DIODES ***	
D1603 D1608	360KA009	DIODE 1S2473 AT26	2
D1101 D1102 D1202	360KA025	DIODE 1SS133	18
D1217 D1223 D1224			
D1401 D1402 D1601			

MODEL : SYS/SER/VID PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
D1602 D1604 D1605	360KA025	DIODE,1SS133	18
D1606 D1607 D1611			
D1612 D1613 D1614			
ZD1603	369KE198	ZENER DIODE RD16EB2,AT26	1
ZD1101	369KE440	ZENER DIODE RD10JB3,AT26	1
ZD1602	36905046	ZENER,DIODE RD-6.2EB2-H	1
		*** VARIABLE RESISTORS ***	
X1101	39080023	4.19MHZ RESONATOR	1
RM1101	39906127	RBLOCK100K*4 1.8MM 1/16W	1
VR1201	41951144	R,VARIABLE 2.2K,B	1
VR1213	41951146	R,VARIABLE 4.7K,B	1
VR1205	41951147	R,VARIABLE 6.8K,B	1
VR1402	41951148	R,VARIABLE 10K,B	1
VR1204 VR1210	41951150	R,VARIABLE 22K,B	2
VR1202 VR1203 VR1206	41951152	R,VARIABLE 47K,B	3
VR1601	41951154	R,VARIABLE 100K,B	1
VR1603	41951157	R,VARIABLE 330K,B	1
VR1401	41951249	R,VARIABLE 2.2KB	1
		*** COILS & FILTERS ***	
L1205 L1404	610G1545	FILTER COIL 2200UH	2
L1206 L1207 L1409	610G1819	FILTER COIL 0405 15UH,AT	3
L1203 L1219 L1401	610G1825	FILTER COIL 0405 47UH,AT	4
L1408			
L1202 L1204 L1210	610G1829	FILTER COIL 0405 100UH,AT	10
L1211 L1216 L1217			
L1406 L1407 L1410			
L1411			
L1403	610G1833	FILTER COIL 0405 220UH,AT	1
L1402	610G1835	FILTER COIL 0405 330UH,AT	1
L1601	61072132	COIL,FILTER 100UH	1
CF1401	61137009	CERAMIC FILTER 4.16MHZ	1
DL1401	61551046	DELAY (COMB FILTER)	1
DL1202	61551080	1HDLL(PAL,NOISE CANCEL)	1
FL1201	61827038	3.2MHZ L.P.F	1
FL1402	61827066	PAL 2IN1FILTER(5.06,1.4M)	1
FL1401	61827067	4.43MHZ BPF(3435)	1
T1401	61828014	LC FILTER (8KHZ TRAP)	1
		*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***	
X1401	64004143	X'TAL 4.43MHZ (W/O-ADJ)	1

MODEL : SYS/SER/VID PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
				*** APPEARANCE PARTS ***	
			16286431	PWB HINGE	1
			16286932	BAND WHITE	1
			16288391	PWB BRACKET(H7)	1
			16288401	CLUMPER	1
			16582441	HEAT SINK(2)	1
			16630891	SSAV SPACER	1
			16631011		1
			16875531	SCREW M3*8*15BF	1
				*** RESISTORS ***	
R1437			401KE641	R,CARBON 47H 5% 1/6W	1
R1366			401KE649	R,CARBON 100H 5% 1/6W	1
R1248			401KE651	R,CARBON 120H 5% 1/6W	1
R1245			401KE653	R,CARBON 150H 5% 1/6W	1
R1125	R1126	R1127	401KE657	R,CARBON 220H 5% 1/6W	5
R1415	R1660				
R1246	R1253		401KE659	R,CARBON 270H 5% 1/6W	2
R1421			401KE661	R,CARBON 330H 5% 1/6W	1
R1413	R1420		401KE665	R,CARBON 470H 5% 1/6W	2
R1236			401KE666	R,CARBON 510H 5% 1/6W	1
R1249			401KE667	R,CARBON 560H 5% 1/6W	1
R1150	R1225	R1235	401KE669	R,CARBON 680H 5% 1/6W	5
R1240	R1636				
R1418	R1688		401KE670	R,CARBON 750H 5% 1/6W	2
R1228	R1429	R1689	401KE671	R,CARBON 820H 5% 1/6W	3
R1128	R1213	R1233	401KE673	R,CARBON 1.0K 5% 1/6W	17
R1310	R1363	R1414			
R1416	R1417	R1423			
R1424	R1436	R1438			
R1447	R1454	R1629			
R1640	R1648				
R1220	R1252	R1258	401KE675	R,CARBON 1.2K 5% 1/6W	5
R1412	R1419				
R1239	R1241	R1289	401KE677	R,CARBON 1.5K 5% 1/6W	5
R1299	R1313				
R1215	R1218	R1282	401KE679	R,CARBON 1.8K 5% 1/6W	7
R1283	R1404	R1641			
R1659					
R1207	R1210	R1211	401KE681	R,CARBON 2.2K 5% 1/6W	9
R1247	R1365	R1425			
[illegible]	[illegible]	[illegible]			
R1403	R1624	R1625	401KE683	R,CARBON 2.7K 5% 1/6W	3
R1121	R1122	R1123	401KE685	R,CARBON 3.3K 5% 1/6W	14
R1124	R1134	R1137			
R1140	R1142	R1147			

MODEL : SYS/SER/VID PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
R1614	R1646	R1655	401KE685	R,CARBON 3.3K 5% 1/6W	14
R1675	R1676				
R1280	R1411	R1430	401KE689	R,CARBON 4.7K 5% 1/6W	3
R1250	R1367	R1428	401KE691	R,CARBON 5.6K 5% 1/6W	10
R1432	R1433	R1442			
R1451	R1608	R1663			
R1664					
R1405	R1406	R1607	401KE693	R,CARBON 6.8K 5% 1/6W	5
R1643	R1644				
R1426	R1657		401KE695	R,CARBON 8.2K 5% 1/6W	2
R1119	R1120	R1216	401KE697	R,CARBON 10K 5% 1/6W	11
R1244	R1296	R1298			
R1305	R1362	R1448			
R1677	R1680				
R1401	R1410	R1605	401KE699	R,CARBON 12K 5% 1/6W	4
R1650					
R1221	R1633	R1634	401KE701	R,CARBON 15K 5% 1/6W	7
R1652	R1653	R1668			
R1674					
R1626	R1631	R1632	401KE703	R,CARBON 18K 5% 1/6W	4
R1637					
R1203	R1204	R1237	401KE705	R,CARBON 22K 5% 1/6W	8
R1238	R1303	R1304			
R1445	R1671				
R1300	R1301	R1658	401KE709	R,CARBON 33K 5% 1/6W	3
R1620			401KE711	R,CARBON 39K 5% 1/6W	1
R1606			401KE713	R,CARBON 47K 5% 1/6W	1
R1627	R1679		401KE715	R,CARBON 56K 5% 1/6W	2
R1604	R1619		401KE717	R,CARBON 68K 5% 1/6W	2
R1617			401KE718	R,CARBON 75K 5% 1/6W	1
R1603	R1638		401KE719	R,CARBON 82K 5% 1/6W	2
R1111	R1112	R1115	401KE721	R,CARBON 100K 5% 1/6W	24
R1135	R1138	R1139			
R1141	R1144	R1145			
R1146	R1148	R1408			
R1409	R1422	R1434			
R1610	R1616	R1628			
R1639	R1642	R1647			
R1649	R1683	R1687			
R1443	R1615	R1635	401KE723	R,CARBON 120K 5% 1/6W	3
R1222	R1609		401KE727	R,CARBON 180K 5% 1/6W	2
R1623	R1682		401KE729	R,CARBON 220K 5% 1/6W	2
R1613			401KE731	R,CARBON 270K 5% 1/6W	1
R1618			401KE737	R,CARBON 470K 5% 1/6W	1
R1673			401KE739	R,CARBON 560K 5% 1/6W	1
R1681			401KE741	R,CARBON 680K 5% 1/6W	1
R1672			401KE744	R,CARBON 910K 5% 1/6W	1
R1427	R1611	R1645	401KE745	R,CARBON 1.0M 5% 1/6W	5
R1654	R1684				
R1455			40105709	R,CARBON 33K 5% 1/6W	1
R1116			40105728	R,CARBON 200K 5% 1/6W	1
R1103			40351109	R,METAL 2.2H 5% 1W	1
R1602			40809801	R.FUSE 1.0H 5% 1/2W	1
R1656			409HB649	R,CARBON 100H 5% 1/4W	1
R1229	R1452		409HB657	R,CARBON 220H 5% 1/4W	2

MODEL : SYS/SER/VID PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
R1101	409HB665	R,CARBON 470H 5% 1/4W	1
R1669	409HB671	R,CARBON 820H 5% 1/4W	1
R1118 R1219	409HB673	R,CARBON 1.0K 5% 1/4W	2
R1129 R1130 R1131 R1132 R1622	409HB685	R,CARBON 3.3K 5% 1/4W	5
R1670	409HB689	R,CARBON 4.7K 5% 1/4W	1
R1665	409HB691	R,CARBON 5.6K 5% 1/4W	1
R1136 R1201 R1312	409HB697	R,CARBON 10K 5% 1/4W	3
R1407	409HB701	R,CARBON 15K 5% 1/4W	1
R1431 R1678	409HB705	R,CARBON 22K 5% 1/4W	2
R1104 R1105	409HB714	R,CARBON 51K 5% 1/4W	2
R1106 R1143	409HB721	R,CARBON 100K 5% 1/4W	2
R1651	409HB725	R,CARBON 150K 5% 1/4W	1
R1630	409HB751	R,CARBON 1.8M 5% 1/4W	1
R1612	409HB761	R,CARBON 4.7M 5% 1/4W	1
R1102	40912161	R,CARBON 330H 5% 1/2W	1
R1357	40982217	R,CARBON 68K 5% 1/4W	1
R1686	40983249	R,CARBON 1.5M 5% 1/4W	1
	*** CAPACITORS ***		
C1103	421A0933	C,CERAMIC 50V 0.047UF	1
C1253	421CB015	C,CERAMIC 50V 12 PF	1
C1291 C1421	421CB017	C,CERAMIC 50V 15 PF	2
C1266 C1268	421CB019	C,CERAMIC 50V 18 PF	2
C1210 C1254	421CB027	C,CERAMIC 50V 39 PF	2
C1402	421CB031	C,CERAMIC 50V 56 PF	1
C1206 C1236	421CB035	C,CERAMIC 50V 82 PF	2
C1108 C1212 C1625	421CB037	C,CERAMIC 50V 100PF	3
C1227 C1231	421CB038	C,CERAMIC 50V 120PF	2
C1242	421CB039	C,CERAMIC 50V 150PF	1
C1626	421CB041	C,CERAMIC 50V 220PF	1
C1614	421CB042	C,CERAMIC 50V 270PF	1
C1413	421CB044	C,CERAMIC 50V 390PF	1
C1229 C1646	421CB045	C,CERAMIC 50V 470PF	2
C1205 C1245	421CB047	C,CERAMIC 50V 680PF	2
C1407 C1622 C1645	421CB049	C,CERAMIC 50V 1000PF	3
C1406	421CB209	C,CERAMIC 50V 4.7 PF	1
C1411	421CB239	C,CERAMIC 50V 150PF	1
C1410	421CB240	C,CERAMIC 50V 180PF	1
C1419	421CB241	C,CERAMIC 50V 220PF	1
C1420	421CB245	C,CERAMIC 50V 470PF	1
C1431	421CB453	C,CERAMIC 16V 2200PF	1
[illegible]	421CB455	C,CERAMIC 16V 3300PF	1
C1101 C1102 C1106 C1209 C1211 C1221 C1222 C1232 C1244 C1246 C1250 C1251 C1252 C1255 C1256 C1257 C1258 C1401	421CB461	C,CERAMIC 16V 0.01UF	27

MODEL : SYS/SER/VID PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
C1408 C1415 C1416 C1423 C1425 C1427 C1429 C1443 C1444	421CB461	C,CERAMIC 16V 0.01UF	27
C1208 C1240 C1275 C1288 C1294 C1424 C1435 C1437 C1445 C1638	421CB863	C,CERAMIC 25V 0.022UF	10
C1107	421C0217	C.CERAMIC 50V 2200PF	1
C1109	42110925	C,CERAMIC 50V 0.01UF	1
C1409 C1414 C1639	42110933	C,CERAMIC 50V 0.047UF	3
C1446	42132041	C,CERAMIC 50V 220PF	1
C1654	42132963	C,CERAMIC 25V 0.022UF	1
C1636 C1642 C1643	42966909	C METAL FILM 50V 0.047UF	3
C1641	42966910		1
C1605 C1629	42966912	C,FILM 50V 0.082UF	2
C1624	42966913	C,FILM 50V 0.1UF	1
C1635	42966914	C,METAL FILM 0.12UF	1
C1634	42966919	C,METAL FILM 50V 0.33UF	1
C1604	42968268	C,METAL FILM 50V 0.027UF	1
C1249	42930337	C,CERAMIC 25V 0.1UF	1
C1235	42976547	CQ92V1H561J.A	1
C1243	42976731	C,FILM 50V 0.33 UF 5%	1
C1627	42976808	C METAL FILM 50V 0.039UF	1
C1290	42976813	C METAL FILM 50V 0.1UF	1
C1606	42978153	C,METAL FILM 50V 1500PF	1
C1628	42978161	C,METAL FILM 50V 6800PF	1
C1603	42978163	C,METAL FILM 50V 0.01UF	1
C1607	42978167	C,METAL FILM 50V 0.022UF	1
C1233 C1241 C1287 C1403 C1422 C1434 C1439 C1440 C1612 C1616 C1618 C1632	430A8103	C,ELEC 6.3V 47UF	12
C1105 C1207 C1441 C1613	430A8104	C,ELEC 6.3V 100UF	4
C1224 C1609 C1615 C1623	430A8105	C,ELEC 10V 22UF	4
C1289 C1293 C1432 C1610 C1611 C1617 C1619 C1620 C1640 C1647	430A8109	C,ELEC 16V 10UF	10
C1436	430A8111	C,ELEC 16V 33UF	1
C1276 C1286 C1298	430A8112	C,ELEC 16V 47UF	3
C1104	430A8113	C,ELEC 16V 100UF	1
C1223	430A8114	C,ELEC 25V 4.7UF	1
C1601	430A8118	C,ELEC 25V 47UF	1
C1226 C1248 C1267	430A8119	C,ELEC 35V 3.3UF	3
C1404	430A8125	C,ELEC 50V 0.22UF	1
C1216 C1228 C1405	430A8128	C,ELEC 50V 1UF	5

MODEL : SYS/SER/VID PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
C1621 C1633	430A8128	C,ELEC 50V 1UF	5
C1225 C1433	430A8129	C,ELEC 50V 2.2UF	2
C1608	430A8144	C,ELEC 6.3V 220UF,AT	1
C1637	433A4161	C,ELEC 50V 1.0UF-5BSRA,AT	1
C1220	433A4164	C,ELEC 50V 3.3UF-5BSRA,AT	1
C1644	439H0055	C,ELEC 50V 2.2UF	1
C1602	43983306	C,ELEC 6.3V 470UF	1

MODEL : PRE AMP PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** ICS ***	
IC501	37151238	IC AN6326N (HEAD AMP)	1
		*** TRANSISTORS ***	
TR501 TR502 TR505 TR506 TR507	355D1931	TR 2SC2785(E,F,H,J)AT	5
TR503	35543200	TR,2SC2188	1
TR504	35562244	TR,2SD639 R,S	1
		*** COILS & FILTERS ***	
L508	610G1545	FILTER COIL 2200UH	1
L506	610G1818	FILTER COIL 0405 12UH,AT	1
L501	610G1819	FILTER COIL 0405 15UH,AT	1
L504	610G1821	FILTER COIL 0405 22UH,AT	1
L505	610G1825	FILTER COIL 0405 47UH,AT	1
L510	610G1826	FILTER COIL 0405 56UH,AT	1
L502 L503	610G1829	FILTER COIL 0405 100UH,AT	2
		*** APPEARANCE PARTS ***	
	16582291	SHIELD CASE COVER A	1
	16582301	SHIELD CASE COVER B	1
	16582311	SHIELD CASE FRAME	1
		*** RESISTORS ***	
R509 R510	401KE625	R,CARBON 10H 5% 1/6W	2
R508	401KE633	R,CARBON 22H 5% 1/6W	1
R506	401KE643	R,CARBON 56H 5% 1/6W	1
R504	401KE649	R,CARBON 100H 5% 1/6W	1
R505 R518	401KE657	R,CARBON 220H 5% 1/6W	2
R515	401KE659	R,CARBON 270H 5% 1/6W	1
R507 R511 R528	401KE661	R,CARBON 330H 5% 1/6W	3
R503 R520	401KE669	R,CARBON 680H 5% 1/6W	2
R517	401KE671	R,CARBON 820H 5% 1/6W	1
R514 R516 R519 R522	401KE673	R,CARBON 1.0K 5% 1/6W	4
R513 R521 R523	401KE677	R,CARBON 1.5K 5% 1/6W	3
R502	401KE679	R,CARBON 1.8K 5% 1/6W	1
R530	401KE685	R,CARBON 3.3K 5% 1/6W	1
R501	401KE693	R,CARBON 6.8K 5% 1/6W	1
R512 R524 R525	401KE697	R,CARBON 10K 5% 1/6W	3

MODEL : PRE AMP PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** CAPACITORS ***	
C501	421CB017	C,CERAMIC 50V 15 PF	1
C516	421CBC25	C,CERAMIC 50V 33 PF	1
C518	421CBC35	C,CERAMIC 50V 82 PF	1
C525	421CBC46	C,CERAMIC 50V 560PF	1
C517	421CB451	C,CERAMIC 16V 1500PF	1
C506	421CB457	C,CERAMIC 16V 4700PF	1
C508 C509 C519	421CB461	C,CERAMIC 16V 0.01UF	3
C504 C513 C515 C524	421CB863	C,CERAMIC 25V 0.022UF	4
C507 C510	421J9C09	C,CERAMIC 50V 0.022UF	2
C502	429C0337	C,CERAMIC 25V 0.1UF	1
C505	42930337	C,CERAMIC 25V 0.1UF	1
C512 C514	430A8107	C,ELEC 10V 47UF	2
C521	430A8109	C,ELEC 16V 10UF	1
C503	430A8112	C,ELEC 16V 47UF	1
C511	430A8125	C,ELEC 50V 0.22UF	1

MODEL : JACK TERMINAL PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
C901	43983306	CE04C0J471 (NEW SS)	1
C902	430A8112	CE04C1C470-5BSRA,AT	1
C903	430A8110	CE04C1C220-5BSRA,AT	1
C904	430A8110	CE04C1C220-5BSRA,AT	1
C905	430A8110	CE04C1C220-5BSRA,AT	1
C906	430A8112	CE04C1C470-5BSRA,AT	1
C907	430A8112	CE04C1C470-5BSRA,AT	1
C908	430A8128	CE04C1H010-5BSRA,AT	1
D901	360KA025	DIODE 1SS133, AT26	1
IC901	37101250	IC BA7026L	1
JK901	79V06321	A/V CONNECTOR (21P)	1
L901	610G2775	FILTER COIL L101J, BT ELEPK, A	1
L902	610G2775	FILTER COIL L101J, BT ELEPK, A	1
MD901	34354028	RF, MODULATOR (PAL. I 36) AL2	1
R901	401KE673	RD1/6PTY1.0KJ,AT26	1
R902	401KE646	RD1/6PTY75HJ,AT26	1
R903	401KE665	RD1/6PTY470HJ,AT26	1
R904	401KE646	RD1/6PTY75HJ,AT26	1
R905	401KE673	RD1/6PTY1.0KJ,AT26	1
R906	401KE673	RD1/6PTY1.0KJ,AT26	1
TR901	35902912	TRANSISTOR 2SA 952 L	1
LPF901	69699005	DS310-55B271	1
LPF902	69699005	DS310-55B271	1
C909	42311100	CC45SL1H391J.B	1
C910	42311100	CC45SL1H391J.B	1
C911	42331045	CC45SL1H101J, A	1

MODEL : NORMAL AUDIO PWB ASS

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** ICS ***	
IC4001	37101311	IC LA7098 (AUDIO)	1
		*** TRANSISTORS ***	
TR4001	35055312	TR 2SC2001 L	1
		*** VARIABLE RESISTORS ***	
VR4002	41951249	R,VARIABLE 2.2KB	1
VR4001	41951254	R,VARIABLE 10KB	1
		*** COILS & FILTERS ***	
L4001 L4002	610E2100	FILTER COIL 822J,AT	2
L4003	61061537	FILTER COIL 470UH AT(S)	1
T4001	61911215	OSC COIL	1
		*** APPEARANCE PARTS ***	
A107	16445602	SLIDE HINGE	2
		*** RESISTORS ***	
R4022	401KE625	R,CARBON 10H 5% 1/6W	1
R4021	401KE631	R,CARBON 18H 5% 1/6W	1
R4016	401KE643	R,CARBON 56H 5% 1/6W	1
R4005	401KE667	R,CARBON 560H 5% 1/6W	1
R4007 R4015	401KE673	R,CARBON 1.0K 5% 1/6W	2
R4012	401KE675	R,CARBON 1.2K 5% 1/6W	1
R4014	401KE681	R,CARBON 2.2K 5% 1/6W	1
R4002	401KE687	R,CARBON 3.9K 5% 1/6W	1
R4009	401KE689	R,CARBON 4.7K 5% 1/6W	1
R4013	401KE696	R,CARBON 9.1K 5% 1/6W	1
R4003 R4019 R4020	401KE705	R,CARBON 22K 5% 1/6W	3
R4001	401KE713	R,CARBON 47K 5% 1/6W	1
R4004	401KE741	R,CARBON 680K 5% 1/6W	1
R4011	40105674	R,CARBON 1.1K 5% 1/6W	1
R4008	40105715	R,CARBON 56K 5% 1/6W	1
R4023	40982101	R,CARBON 1.0H 5% 1/4W	1
R4010	40982249	R,CARBON 1.5M 5% 1/4W	1

MODEL : NORMAL AUDIO PWB ASS

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** CAPACITORS ***	
C4026	421CB049	C,CERAMIC 50V 1000PF	1
C4027	42331052	C,CERAMIC 50V 200PF	1
C4024	42968251	C,METAL FILM 50V 1000PF	1
C4023	42968253	C,METAL FILM 50V 1500PF	1
C4005 C4014	42968259	C,METAL FILM 50V 4700PF	2
C4008 C4009	42968264	C,METAL FILM 50V 0.012UF	2
C4015	42968268	C,METAL FILM 50V 0.027UF	1
C4001	42968471	C,FILM 50V 680PF 5%	1
C4025	42974161	C,FILM 100V 0.033UF 5%	1
C4013	430A8109	C,ELEC 16V 10UF	1
C4011 C4022	430A8110	C,ELEC 16V 22UF	2
C4007 C4010 C4012 C4019 C4020 C4021	430A8112	C,ELEC 16V 47UF	6
C4018	439A1583	C,ELEC 10UF 16V	1
C4004	439A1602	C,ELEC 1UF 50V	1

MODEL : TIMER/FUNCTION PWE A

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** ICS ***			
IC2003	37101286	IC M5278L56	1
IC2001	37151363	MOS UPD75216ACW-021 N9055	1
*** TRANSISTORS ***			
TR2C11	355D1931	TR 2SC2785(E,F,H,J)AT	1
TR2002 TR2003	355D2716	TR,BA1F4M	2
TR2C01	355K2120	DIGITAL TRANSISTOR	1
*** DIODES ***			
D2001 D2002 D2003	360KA025	DIODE,1SS133	19
D2004 D2005 D2006			
D2007 D2008 D2009			
D2010 D2011 D2012			
D2013 D2014 D2015			
D2016 D2017 D2022			
D2031			
D2047	36001025	DIODE 1SS133	1
ZD2C01	36003112	DIODE,RD9.1EB-3	1
LD2C03	36904263	LED RED SLR-34VC3	1
*** VARIABLE RESISTORS ***			
X2001	39080023	4.19MHZ RESONATCR	1
*** RELAYS & SWITCHES ***			
SW2001 SW2004 SW2006	65330052	TACT SWITCH	18
SW2007 SW2008 SW2009			
SW2010 SW2012 SW2014			
SW2016 SW2017 SW2018			
SW2020 SW2021 SW2022			
SW2026 SW2027 SW2037			
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***			
X2002	64004151	X'TAL 32.768KHZ	1
FD2001	67930062	FIP9TM7 (VPS)	1
*** APPEARANCE PARTS ***			
	16444833	LED HOLDER	1
	16445962	HCLDER	1

MODEL : TIMER/FUNCTION PWB A

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** RESISTORS ***			
R2037 R2038 R2039	401KE657	R,CARBON 22CH 5% 1/6W	7
R2040 R2041 R2042			
R2043			
R2026	401KE661	R,CARBON 330H 5% 1/6W	1
R2001	401KE665	R,CARBON 470H 5% 1/6W	1
R2013	401KE673	R,CARBON 1.CK 5% 1/6W	1
R2006	401KE685	R,CARBON 3.3K 5% 1/6W	1
R2004 R2009 R2010	401KE697	R,CARBON 10K 5% 1/6W	8
R2011 R2012 R2027			
R2029 R2045			
R2005	401KE717	R,CARBON 68K 5% 1/6W	1
R2008 R2014 R2028	401KE721	R,CARBON 100K 5% 1/6W	5
R2030 R2034			
R2024 R2033	401KE729	R,CARBON 220K 5% 1/6W	2
R2002	401KE733	R,CARBON 330K 5% 1/6W	1
R2003	401KE741	R,CARBON 680K 5% 1/6W	1
R2049	40105649	R,CARBON 100H 5% 1/6W	1
*** CAPACITORS ***			
C2011	421CBC49	C,CERAMIC 5CV 1000PF	1
C2007 C2008 C2009	421CB237	C,CERAMIC 50V 100PF	11
C201C C2016 C2024			
C2025 C2026 C2027			
C2028 C2029			
C2003 C2023	421CB862	C,CERAMIC 25V 0.01UF	2
C2006 C2015 C2022	421CB863	C,CERAMIC 25V 0.022UF	3
C2012 C2013	423A2C37	C,CERAMIC 50V 47PF	2
C2C01 C2005 C2014	430A8109	C,ELEC 16V 10UF	3
C2002	430A8124	C,ELEC 50V 0.1UF	1
C2C04	430A8351	C,ELEC 50V 3.3UF	1
C2021	430A8352	C,ELEC 50V 4.7UF	1

MODEL : SUB FUNCTION PWB ASS

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** DIODES ***	
D2030 D2033 D2034 D2043 D2045	360KA009	DIODE 1S2473 AT26	5
LD2001	36904262	LED GRN SLR-34MC3	1
		*** VARIABLE RESISTORS ***	
VR2001	41504183	SLIDE VR 500KB (20MM)	1
VR2002	41504184	SLIDE VR 2KB (20MM)	1
VR2003	41951154	R,VARIABLE 100K,B	1
		*** RELAYS & SWITCHES ***	
SW2038 SW2041	65180052	SLIDE SW 1-1-2	2
SW2040	65180060	SW,SLIDE	1
SW2011 SW2013 SW2019 SW2023 SW2037	65330052	TACT SWITCH	5
		*** APPEARANCE PARTS ***	
	16445651	LED HOLDER	1
		*** RESISTORS ***	
R2036	409HB661	R,CARBON 33OH 5% 1/4W	1
		*** CAPACITORS ***	
C2020	43920001	C,ELEC DOUBLE LAYER	1

MODEL : TUNER/IF PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** CRT & TUNER ***	
	34393021	U/V TUNER(CATV)	1
		*** ICS ***	
IC3104	37101127	IC UPC-393C	1
IC3001	37101240	IC LA7530	1
IC3103	37101284	IC LA7210	1
IC3102	37151324	MOS M58655P (EAROM)	1
IC3101	37903162	IC LA7910 (X0260C)	1
		*** TRANSISTORS ***	
TR3108	35004113	TR,2SA916 M	1
TR3104	35055312	TR 2SC2001 L	1
TR3105	35058012	TR 2SC2352 L	1
TR3003 TR3102 TR3107	355D1931	TR 2SC2785(E,F,H,J)AT	3
TR3001 TR3002 TR3101 TR3103	355K1131	TR,2SA1175 (E,F,H,J)	4
TR3004	35940502	TR,2SC1730 L	1
		*** DIODES ***	
D3101 D3102 D3103 D3104 D3105 D3106	360KA025	DIODE,1SS133	6
ZD3101	36003049	ZENER DIODE UPC-574J	1
		*** VARIABLE RESISTORS ***	
X3101	39080012	CERAMIC RESO. CSB500E5	1
VR3101	41951148	R,VARIABLE 10K,B	1
		*** COILS & FILTERS ***	
L3003	610G2765	COIL FILTER	1
L3004	610G2773	COIL FILTER	1
L3005	61011531	SAW COIL 1R8	1
L3002	61011535	SAW COIL 2R7	1
FL3002	611C7034	CERAMIC DISCRIMINATER	1
FL3003	611K5C12	SIF FILTER 5.5MHZ	1
FL3004	61137037	CERAMIC TRAP TPS5.5MW	1
FL3001	61138C23	VIF SAWF SAF38.9MZR72Z	1
T3001 T3002	61815155	V.IFT (9.5TURN)	2

MODEL : TUNER/IF PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***					
			70780009	CABLE,CONNECTOR (110MM)	1
*** APPEARANCE PARTS ***					
			16582402	TUNER SHIELD CASE	1
*** RESISTORS ***					
R3037			401KE625	R,CARBON 10H 5% 1/6W	1
R3035			401KE641	R,CARBON 47H 5% 1/6W	1
R3025			401KE645	R,CARBON 68H 5% 1/6W	1
R3036			401KE649	R,CARBON 100H 5% 1/6W	1
R3023			401KE653	R,CARBON 150H 5% 1/6W	1
R3032			401KE657	R,CARBON 220H 5% 1/6W	1
R3003			401KE659	R,CARBON 270H 5% 1/6W	1
R3009	R3011	R3145	401KE661	R,CARBON 330H 5% 1/6W	3
R3024			401KE663	R,CARBON 390H 5% 1/6W	1
R3004	R3020		401KE665	R,CARBON 470H 5% 1/6W	2
R3018	R3038		401KE669	R,CARBON 680H 5% 1/6W	2
R3007	R3015	R3017	401KE673	R,CARBON 1.0K 5% 1/6W	7
R3019	R3127	R3128			
R3143					
R3142			401KE675	R,CARBON 1.2K 5% 1/6W	1
R3010	R3034	R3102	401KE681	R,CARBON 2.2K 5% 1/6W	7
R3103	R3120	R3121			
R3122					
R3110			401KE685	R,CARBON 3.3K 5% 1/6W	1
R3134			401KE687	R,CARBON 3.9K 5% 1/6W	1
R3002	R3012	R3022	401KE689	R,CARBON 4.7K 5% 1/6W	5
R3125	R3126				
R3005			401KE691	R,CARBON 5.6K 5% 1/6W	1
R3021			401KE693	R,CARBON 6.8K 5% 1/6W	1
R3111	R3112		401KE697	R,CARBON 10K 5% 1/6W	2
R3033			401KE699	R,CARBON 12K 5% 1/6W	1
R3141			401KE701	R,CARBON 15K 5% 1/6W	1
R3114	R3115	R3116	401KE703	R,CARBON 18K 5% 1/6W	4
R3146					
R3113	R3135	R3136	401KE705	R,CARBON 22K 5% 1/6W	3
R3008			401KE707	R,CARBON 27K 5% 1/6W	1
R3013	R3108	R3109	401KE713	R,CARBON 47K 5% 1/6W	6
R3149	R3150	R3153			
R3147			401KE717	R,CARBON 68K 5% 1/6W	1
R3006	R3014	R3105	401KE721	R,CARBON 100K 5% 1/6W	3
R3107	R3123	R3124	401KE729	R,CARBON 220K 5% 1/6W	3

MODEL : TUNER/IF PWB ASSY

SYMBOL			PARTS NO	DESCRIPTION	QTY
R3144			401KE733	R,CARBON 330K 5% 1/6W	1
R3104	R3106		401KE737	R,CARBON 470K 5% 1/6W	2
R3119			401KE741	R,CARBON 680K 5% 1/6W	1
R3118			401KE745	R,CARBON 1.0M 5% 1/6W	1
R3133			40809989	R,FUSE 2.2H 5% 1/4W	1
R3152			409HB641	R,CARBON 47H 5% 1/4W	1
R3137	R3138		409HB721	R,CARBON 100K 5% 1/4W	2
R3027	R3031	R3148	40913109	R,CARBON 2.2H 5% 1/4W	3
R3151			40913125	R,CARBON 10H 5% 1/4W	1
*** CAPACITORS ***					
C3110			421CBC43	C,CERAMIC 50V 330PF	1
C3109	C3113	C3118	421CB049	C,CERAMIC 50V 1000PF	3
C3007	C3009	C3010	421CB461	C,CERAMIC 16V 0.01UF	12
C3014	C3015	C3020			
C3031	C3032	C3033			
C3034	C3101	C3116			
C3001	C3002		421DB133	C,CERAMIC 25V 0.01UF	2
C3120			42110425	C,CERAMIC 50V 0.01UF	1
C3004			423A2015	C,CERAMIC 50V 10PF	1
C3018			423A2025	C,CERAMIC 50V 15PF	1
C3025			423A6003	C,CERAMIC 50V 3PF	1
C3011	C3012		423A6040	C,CERAMIC 50V 62PF	2
C3005			429G8267	C,METAL FILM 50V 0.022UF	1
C3008			430A8109	C,ELEC 16V 10UF	1
C3019			430A8110	C,ELEC 16V 22UF	1
C3016	C3021	C3102	430A8112	C,ELEC 16V 47UF	4
C3115					
C3111	C3114		430A8127	C,ELEC 50V 0.47UF	2
C3003	C3108	C3112	430A8128	C,ELEC 50V 1UF	3
C3006			430A8130	C,ELEC 50V 3.3UF	1
C3106			430B6068	C,ELEC 50V 47UF	1
C3117			43018103	C,ELEC 6.3V 47UF	1
C3103	C3104	C3105	439H0049	C,ELEC 50V 0.22UF	3

MODEL : POWER/REGULATOR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
	*** IC ***		
IC001	79VA0003	IC M5237L UCZ0097ZZ	1
IC002	79VA0004	IC PQ12R02 UCB0028AZ	1
	*** TRANSISTORS ***		
TR001	35520817	TR, 2S8949 Q	1
TR002	35003516	TR, 2SA733/733A P	1
TR003	35543519	TR, 2SC2390	1
TR005	79VA0005	2SD1266 UAD0090CZ	1
TR006	35170501	TR, AA1A4M	1
TR007	79VA0006	2SD1286 UAD0089AZ	1
TR008	35541931	TR, 2SC2785 (E, F, H, J)	1
TR009	35170505	TR, AA1A4M	1
	*** DIODES ***		
D002	36107522	RECTIFIER, SI ERA15-02	1
D003	36107522	RECTIFIER, SI ERA15-02	1
D004	79VA0007	DIODE, ERA15-01 UBC0125*Z	1
D005	79VA0007	DIODE, ERA15-01 UBC0125*Z	1
D006	79VA0007	DIODE, ERA15-01 UBC0125*Z	1
D007	79VA0007	DIODE, ERA15-01 UBC0125*Z	1
D008	79VA0007	DIODE, ERA15-01 UBC0125*Z	1
D009	36003954	DIODE 1S2076A	1
ZD002	36905204	ZENER DIODE, RD20EB	1
ZD003	36905220	ZENER DIODE, RD30EB	1
	*** TRANSFORMER ***		
PT001	79VA0077	TRANSFORMER, NH1310	1
	*** SWITCH ***		
SW001	79VA0071	SF-W101W-01BB, PJC0136ZZ	
	*** FUSES ***		
F001	66671005	FUSE SET 2A 250V	1
F091	66671005	FUSE SET 2A 250V	1
	*** RESISTORS ***		
R003	79VA0008	1/4W2.2KJB(7.5) UEEB222BA	1
R004	79VA0009	RS1PC510HJ.S UEFD511BF	1
R006	79VA0010	1/4W33KGB(7.5)	1
R007	79VA0011	1/4W33KJ.B(7.5)	1
R008	79VA0012	1/4W0.22HK, S	1
R009	79VA0013	1W0.47HK, S	1
R010	79VA0014	1/4W2.7KJ, B(7.5)	1
R012	79VA0015	1/4W15KJ.B(7.5) UEEB153BA	1

SMODEL : POWER/REGULATOR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
R013	79VA0016	1/4W220BJ, B(7.5)	1
R014	79VA0017	1/4W1.2KJ, B(7.5)	1
R015	79VA0018	1/4W10KJ, B(7.5)	1
R017	79VA0011	1/4W4.3KG, B(7.5)	1
R018	79VA0019	1/4W680HJ, B(7.5)	1
R020	79VA0020	1/4W22KJ, B(7.5)	1
R021	79VA0015	1/4W15KJ, B(7.5) UEEB153BA	1
L091	79VA0076	CHOKE COIL FK0B160MH15	1
	*** CAPACITORS ***		
C002	43026058	C, ELEC 35V 1000UF	1
C003	79VA0021	CE04W1J101MA UGAG104BU	1
C004	43026041	CE04W1E470MA	1
C005	43026034	CE04W1C222MA	1
C006	42976509	CQ92V1H472J, A	1
C007	43026048	CE04W1E332MA	1
C008	43026028	CE04JC470MA	1
C009	43026045	CE04W1E471MA	1
C010	79VA0022	CE04W2A010MA UGAJ1ROBU	1
C011	42311045	CC45SL1H101J, B	1
C012	79VA0023	CE04W2A101MA UGAJ101BU	1
C013	79VA0063	CE04W1H010MA UGAF1ROBU	1
C015	42976525	CQ92V1H104J, A	1
C016	79VA0022	CE04W2A010MA UGAJ1ROBU	1
C017	43026054	CE04W1V101MA	
C021	79VA0022	CE04W2A010MA UGAJ1ROBU	1
C022	79VA0069	CE04W2A470MA UGAJ470BU	1
C023	79VA0022	CE04W2A010MA UGAJ1ROBU	1
C091	79VA0074	0.1UF UGZ0326ZZ	1
PC001	79VA0075	POWER SUPPLY CORD IEC EHS0291ZZ	1
	18292501	WIRE CLAMPER #2104	1

MODEL : PACKING ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***	
	79559054	IEC RF CABLE (1.2M)	1
K007	79799460	REMOCON UNIT RB-55P	1
		*** APPEARANCE PARTS ***	
K011	16830121	PACKAGE	1
K011	16831761	SHEET	1
K009	16832952	CUSHION(FRONT)	1
K010	16832961	CUSHION(REAR)	1
K012	16833411	CARTON BOX N9055G	1
		*** PRINTED & PACKING MATERIALS ***	
K003	78817041	INSTRUCTION BOOK N9055G	1

MODEL : MECHANICAL PARTS

SYMBOL	PARTS NO	DESCRIPTION	QTY
		*** PWB ASSYS ***	
B088	82423AH1	ROTARY DRUM SASSY (PAL2H)	1
		*** MECHANICAL PARTS ***	
B003	16177871	S. SOFT BRAKE ARM ASSY	1
B004	16177882	TU.SOFT BRAKE ARM ASSY	1
B005	16177922	LOADING UP ASSY	1
B006	16177932	LOADING LOW ASSY	1
B007	16178003	C.BRAKE ASSY	1
B010	16178062	S.REEL DISK ASSY	1
B012	16178301	EARTH PLATE S.A.	1
B015	16178392	MODE GEAR ASSY	1
B009	16179853	REEL DISK ASSY (2)	1
B071	16180503	IMPEDANCE ROLLER ASSY	1
B011	16180801	R.IDLER ASSY	1
B001	16183542	TENSION ARM ASSY(M2)	1
B002	16183551	TENSION BAND ASSY(M2)	1
B013	16183561	BRAKE ARM(R)ASSY(M2)	1
B014	16183571	BRAKE ARM (L)ASSY(M2)	1
B091	16183581	CONNECTED ARM ASSY	1
B092	16183591	LOCK LEVER ASSY	1
B094	16183611	S LINK ARM ASSY	1
B095	16183632	S LINK ASSY	1
B016	16183642	REVERSE ARM ASSY	1
B066	16183653	PINCH ROLLER ARM ASSY(M2)	1
B069	16183671	MODE CAM ASSY(M2)	1
B073	16183981	LED HOLDER ASSY (M2)	1
B093	16184071	BRAKE LINK ARM ASSY (DC)	1
B084	16184371	R.DRIVE ASSY (M2)	1
B067	16184381	PINCH.LINK ASSY	1
B018	16287641	NUT	4
	16288001	POLY SLIDER	2
B019	16288381	CLAMPER	1
B020	16442101	GUIDE ROLLER	6
B021	16442111	GUIDE ROLLER HOLDER	3
B022	16442121	GEAR (1)	1
B023	16442131	GEAR (2)	1
B024	16442161	DRIVE BELT	1
B027	16443362	GEAR	1
B028	16444374	G.P CAP	1
B098	16448341	ACE CODE CRAMPER	1